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THE COTTAGE GARDENER,

AND

COUNTRY GENTLEMAN'S COMPANION.

CONDUCTED BY GEORGE W. JOHNSON, ESQ.

EDITOR OF THE "GARDENER'S ALMANACK," ETC.

THE FRUIT AND FORCING-GARDEN, by Mr. R. Errington, Gardener to Sir P. Egerton, Bart., Oulton Park.

THE KITCHEN-GARDEN, by Mr. J. Robson, Gardener to the late Earl Cornwallis; and Mr. T. Weaver, Gardener to the Warden of Winchester College.

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TO OUR READERS.

At the close of our last Volume we expressed a hope for a blessing on our next six months' exertions, and that hope has been realized. We promised to report the result, and we now fulfil that promise.

Our pages throughout the present Volume are evidences of the unwearied and successful exertions of our contributors, and our list of readers gives the most unmis- takeable of testimony that those exertions meet the requirements of the gardening community. Another section of that community is now annually largely increased—the proprietors of small plots obtained by the agency of Allotment and Freehold Land Societies. To the information needed by the tenants of these plots we shall specially direct a portion of our attention; for although all the contents of our columns are directly, or indirectly, useful to all garden cultivators, yet these tenants often need more elementary information, and it will be our endeavour to impart it. We may often fail to state such particulars as they need, but when we do so fail, it will be received as a favour if fresh questions are asked, and our short-comings are pointed out to us.

This leads us to observe that apologies often accompany the inquiries sent to us. Such apologies are quite misplaced, for we covet such inquiries as the best of guides to the information required from us. It is easy to teach when we know what is desired to be learned.

Our endeavour to encourage such inquiries has been so successful, that the replies to them have become a prominent and highly useful portion of our labours. So numerous and so various have inquiries become, that we shall endeavour in future to give the answers to them more prominently, and, in some degree, classified.

In conclusion, we tender our hearty thanks to all our friends and allies, who, we rejoice to find, we have in all the countries of Europe except Russia, and by their continued aid we feel pretty sure of making an impression even there. We are not superstitious, but when we observe that whilst our *Great Northern* Carnation is dead, our *Queen Victoria* Carnation is more than usually vigorous, we cannot but receive it as a good omen, not only in our own little warfare against ignorance, but in the far mightier one that is now impending.

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WEEKLY CALENDAR.

M	D	OCTOBER 6—12, 1853.	WEATHER NEAR LONDON IN 1853.					Sun	Sun	Moon	Moon's	Clock	Day of
			Barometer.	Thermo.	Wind.	Rain in	Sun						
D	W					Inches.	Rises.	Sets.	R. & S.	Age.	af. Sun.		Year.
6	TH	Marvel du jour; wood sides.	29.741—29.547	52—39	N.W.	06	11 a. 6	26 a. 5	7 18	4	11 54	279	
7	F	Red Green Carpet; trees.	29.924—29.812	53—37	W.	—	12	23	7 55	5	12 11	280	
8	S	Common Plume; gardens.	29.902—29.872	47—29	N.	—	14	21	8 45	6	12 27	281	
9	SUN	20 SUNDAY AFTER TRINITY.	29.969—29.961	49—31	N.E.	—	16	19	9 47	7	12 44	282	
10	M	Autumnal Dagger; trees.	29.982—29.919	55—33	N.W.	05	17	17	11 0	8	13 0	283	
11	TU	Death's Head; gardens.	30.226—30.052	57—38	N.	—	19	15	morn.	9	13 15	284	
12	W	Grey Shoulder-knot; shaded pales.	30.365—30.331	56—32	N.E.	—	21	12	0 10	10	13 30	285	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 61.3° and 44° respectively. The greatest heat, 79°, occurred on the 6th in 1834; and the lowest cold, 27°, on the 6th in 1850. During the period 88 days were fine, and on 93 rain fell.

BRITISH WILD FLOWERS.

(Continued from Vol. X., page 493.)

BARBAREA.—WINTER CRESS.

GENERIC CHARACTERS.—*Calyx* nearly equal at the base, erect; leaves oblong, concave, somewhat coloured, deciduous. *Petals* reversed egg-shaped, blunt, undivided, flat; claws nearly the length of the calyx. *Filaments* awl-shaped, simple, distinct, erect, with a gland at each side between the two shorter ones and the pistil. *Germen* oblong, quadrangular. *Style* short, cylindrical. *Stigma* blunt, simple. *Pod* linear, with four angles, slightly compressed; valves concave, keeled, even and straight; partition membranous, thick-edged. *Seeds* ranged alternately, in a single row, egg-shaped, flattish, not bordered; cotyledons flat, acuminate.

BARBAREA VULGARIS: Belleisle Cress; Bitter Winter Cress; Yellow Rocket; Winter Hedge Mustard.



Description.—It is a perennial. *Root* tapering, somewhat woody. *Stem* about two feet high, simple or branched, leafy, stout, angular and furrowed. *Radical* and lower *stem-leaves* lyrate; upper ones becoming gradually less divided, clasping the stem; the uppermost of all reversed egg-shaped, and much diminished; all are variously toothed, strongly ribbed, of a firm texture, quite smooth. *Petals*

bright yellow. *Flowers* in round-headed, corymbose clusters. *Sepals* of the *calyx* before expansion green, two larger, with a helmet-like hollow at the top. *Pod* not very acutely quadrangular, about an inch long, crowned by the thick, rather elongated, style.

Time of flowering.—May to August.

Places where found.—Common about moist hedges and marshy meadows.

History.—This is sometimes called Herb St. Barbara, and is generally known by that name upon the continent. Why it should be named after that martyr we cannot trace, for it does not bloom about the time of her anniversary, nor is it found upon prison walls, or on hills, of which she is believed by Roman Catholics to be the guardian saint. Old Gerarde, after noticing its antiscorbutic properties, says:—"In winter, when Salad herbs be scarce, this herb is thought to be equal with Cresses of the garden, or Rocket." We think it could be only when other salading was scarce that it could be eaten as their substitute, for the flavour, though pungent, is bitter and nauseous. We are also let a little into the etymology of the name of one of the well-known streets in London, by the following statement by Parkinson, though we may look in vain now, for "Herb St. Barbara," in that locality. He says—"It groweth of its own accord in the next pasture to the Conduit head behind Gray's Inn, that bringeth water to Mr. Lamb's Conduit in Holborn."

A double-flowered variety of this plant is cultivated in our gardens under the name of *Yellow Rocket*, which Parkinson says "was found in the province of Berne, among the Switzers." Cows eat it; horses and swine will not partake of it, and neither goats nor sheep are fond of it.

BARBAREA PRÆCOX: Early Winter Cress.

Description.—It is a biennial. *Stems* one or more, erect, one-and-a-half or two feet high, leafy, angular, smooth, a little branched, tinged at the bottom with a violet hue. *Radical leaves* the first year numerous, spreading on the ground, lyrate, with a rounded toothed terminal lobe, being much like the first species, but of a more neat and regular figure; the *stem-leaves* are often partly lyrate also, but the upper ones are deeply and regularly pinnatifid, with parallel, linear-oblong, bluntish, entire segments. *Flowers* fewer, smaller, and paler than those of *B. vulgaris*. *Pods* thrice as long as in that species, exactly square, smooth. *Style* short, with a blunt, but not large, stigma.

Time of flowering.—April to October.

Places where found.—Banks of ditches and other grassy watery places. It is rare.

History.—This was considered by Linnæus to be only a variety of the preceding species, from which, however, it is very distinct. The leaves which spring directly from the root closely resemble the leaves of the common Water Cress, and it equally resembles that plant in flavour. It is, indeed, an excellent substitute for it as a Salad herb. Those who take so much pains to cultivate the Water Cress in a garden-border would have as palatable a produce, and with much less trouble, from this plant.

The flowers of both species are liable to be pierced by a species of *Tipula*, or Daddy-long-legs, causing a malformation in them resembling the Hop blossom. (Smith. *Martyn*. *Withering*. *Gerarde*. *Parkinson*.)

At this time, when Cholera is again menacing our population, and feeling that a consideration of the measures for preventing its visitation is strictly within our limits, we were about to seek for competent aid, timely and trustworthily to warn our readers, when the following, by a Physician, reached us, and, with the subsequent contributions promised from the same pen, will supply all that we desire.

"Whatever thine hand findeth to do, do it with all thy might."

It is in the power of every one of us to contribute something towards the public safety, in the present emergency, by each exerting himself in his right vocation, and by countenancing and supporting others in theirs. Everything depends upon each individual taking thoroughly to the part which is appropriate to himself. Nothing can be more confusing than bad arrangements, and to see medical men busied with speculations and theories of drainage and hydraulics; surveyors, lawyers, and engineers, inditing prescriptions; clergymen and philanthropists indicting nuisances; while to constables, policemen, parish officers, and strange, raw, medical students, perhaps, is left the most delicate office of all—that of making domiciliary visits among the labouring classes, in order personally to reassure the panic-stricken; to inculcate great regularity in living; and, perhaps, to administer medicine, or other relief, to a class a step above actual pauperism. To the readers of THE COTTAGE GARDENER, as a class, the following exhortation is earnestly addressed:—

"The General Board of Health would remind the affluent that the opportune supply to their poorer neighbours and dependants of wholesome food, warm clothing and bedding, and even such remedies (to be always in readiness) as *their medical attendant may recommend* [mark this] for looseness of the bowels, is charity in the truest sense, and may be the means of saving many lives. The higher classes should co-operate with the clergy who have done so much to promote the object of the legislature in the Public Health Act, in making frequent visits among the poor, and impressing upon them the importance of following the instructions here laid down, with reference to which there is a perfect accordance between the College of Physicians and the Board of Health."—*Notification from the General Board of Health, Whitehall, Sept. 20, 1853.*

The Notification from which the above is extracted, appeared in all the daily papers of Wednesday, September 21st. It is drawn up with consummate skill, breathing strongly of science, humanity, and common sense. The "instructions therein laid down" should be constantly kept in mind by our readers; and, rightly read, they should render all other "instructions" needless. Some portion or other of the document will convey a hint to every one of us, and it behoves us all to be learning our several lessons therefrom.

The quiet, amiable patrons of THE COTTAGE GARDENER, living apart from large, dirty, seaport towns, revelling in pure, fresh air, may haply beg to be excused entering into many details of this subject. Yet, one

question arises during our garden occupations, or when chatting over our dessert—Are we to eat no fruit? The cottage garden is a perilous place, indeed, if this be really the case; though I do not recollect that the mortality among cottage gardeners was ever noted as greatly above the average.

Positively "the Board" and the "College" have not a word to say against garden produce. In "the instructions therein laid down," there is no interdict against fruit. Only, we are to eat and drink moderately; at moderate intervals; avoiding long fasts.

There is a large class of articles of food which seem to say, "Come and eat us; we cannot wait; pray eat us up." And very nice eating things they are all of them, and easily digested. Fruits, vegetables, lamb, veal, and the like; all prime favourites with the cottage gardener, who has them at first hand, and in perfection. Let him eat in peace, only being cautious as to quantity, and very nice as to quality.

It was at one time feared that the labouring poor who have not got, all of them, gardens of their own, and who too often only get the refuse of the market, might, at seasons like the present, glut themselves with half-decayed vegetables and faded fruit (to say nothing of bad veal, tainted lamb, &c.). This may have been the origin of former prohibitions, which led to an interesting discussion between the Board of Health and the College of Physicians, the upshot of which we now see in the removal of the interdict against fruit, and consequent sanction of the College to all the regulations of the Board as now issued, and to which too much importance can scarcely be attached. Any personal advice, or printed placard or hand-bill, which it may be deemed requisite to circulate among the poor, must be formed upon this important "Notification."

One other reference to the Notification, and I will conclude for this week. Very much devolves upon magistrates in the present crisis. It is clearly their mission to see that the wise laws made and provided for this emergency should be actually put in force; and to instruct and urge their officers accordingly.

As guardians of the poor, their attendance at the board-room is now particularly needed. The utmost liberality which the law allows should provide the relief now meted out. The medical officer of the board must be countenanced and supported; for on him rests a great responsibility. From the lists of unhealthy places which the law now requires to be made out, and from personal inspection, and from his own knowledge, it will be for him to certify whether any or all do not require measures of daily cleansing; whether certain nuisances do not need prompt removal; and the manner in which that removal shall be carried out. Armed with the doctor's certificate, the police will have to see that each and all of these matters are attended to. In their daily rounds, all cases of neglect and accumulating filth must be sharply looked after. There are many excellent standing provisions of the Highway Act habitually neglected in many places. These should be strictly enforced by means of the police and committees

of guardians. These are all onerous duties. I mention these things because acts of pure benevolence, such as those referred to at the commencement of my remarks, should not be clogged with the necessity of making-up for the shortcomings of the policeman; or the surveyors of highways; or the poor-law officials. J. J.

[The "Notification" from the Board of Health, dated September 20th, is so excellent, that we publish it entire.]

"It is the painful duty of the General Board of Health to notify a third visitation of epidemic cholera. This disease again, first breaking out in Persia, has extended, within the present year, over a large portion of Russia, stretching as far northwards as Archangel, on the shores of the Arctic Ocean; it has ravaged Denmark, Norway, and Sweden; and then developing itself in the North of Germany, it has attacked Stettin, Berlin, Rotterdam, and Hamburg; and, subsequently, it has appeared in England, again breaking out on its north-east coast, in the near neighbourhood of the town in which it made its first appearance in this country in 1831. In this wide-spread course it has everywhere overleaped the barriers which quarantine has erected to stay its progress; and where this means of protection has been most rigidly enforced, it has not only disappointed the expectation of those who have relied upon it as a safeguard, often to the neglect and exclusion of the most important precautions, but has aggravated the evils of the pestilence, and added disastrous consequences of its own. The experience already obtained of this pestilence at Newcastle, Gateshead, and Hexham, is decisive, that where the conditions are favourable to its localisation and development, as is the case in these towns, the disease has lost nothing of its former virulence. In the two former, indeed, the severity of the disease, as far as it has yet extended, has greatly exceeded that of any former visitation; and it has attacked, in all those places, as it has abroad, a much larger proportion of the middle and higher classes. It is deeply to be lamented that the interval between the last visitation of this pestilence and the present has not been generally employed in effecting a larger amount of improvement in our cities and towns. From such inspections as the General Board have recently been enabled to make of the state of populous districts, the former seats of the disease, in apprehension of its re-appearance, they are compelled to state, that there are extensive districts, and even entire towns, in which no perceptible improvement of any kind has been effected. On the other hand, there are instances in which, even where no general permanent works of improvement have been effected, better supplies of water, extensive flagging and paving, more frequent scavenging, and a more active removal of nuisances in epidemic localities have been accomplished. Combined and permanent works, involving elaborate engineering measures, capable of remedying the neglect of years, cannot be effected in a few weeks; but the consciousness of past neglect should stimulate to immediate and resolute exertion, that all which the time requires, and which can be done, may be done. The results, in some instances, even of limited and partial improvements, are highly encouraging. During the present epidemic in Hamburg, which has now been prevailing upwards of six weeks, only six cases of cholera have occurred in the improved parts of the town; and during the whole of the epidemic in the metropolis, in 1849, not a single case of cholera occurred in any one of the model dwellings for the poor, occupied by similar classes of the population, though the pestilence raged in the districts in which those buildings are situated; and there were instances of two, and even four deaths, in single houses, close to their walls. Even in towns in which the greatest amount of improvement has been effected, and in which works under the Public Health Act are most advanced, much remains to be done, and may be done. Local boards of health are invested, under the Public Health Act, with ample powers for cleansing, for the removal of nuisances, for preventing the carrying on of unwholesome or noxious trades in such a manner as to injure health, for preventing the occupation of cellars as dwelling-houses under certain conditions, for preventing the occupation of any dwelling-house which, on the certificate of an officer of health, shall appear

to be in such a filthy and unwholesome state as to endanger the health of any person, until such house have been properly and effectively whitewashed, cleansed, and purified, and for administering the Common Lodging House Act, the provisions of which are most important. All these powers should be exercised at the present juncture with extraordinary activity, vigilance, and stringency. But though it may be needful to prosecute the work of cleansing more vigorously than in ordinary periods, yet it should be done under supervision and with extraordinary care. In removing accumulations of filth, precautions should be taken for disinfection, and for preventing the increase of noxious evaporation. The contents of foul drains, sewers, and ditches should in no case be spread upon the surface, and no large accumulation of filth should be removed, except under the direction of a medical officer. The escape of noxious effluvia is far more dangerous in an epidemic than in an ordinary season. The evil of overcrowding, so general, not only in common lodging-houses, but in tenements of all descriptions occupied by the poorer classes, especially by the Irish—an evil preventable, and to a considerable extent removable, should be at once and by all practicable means reduced. Wherever local boards of health exist, they should in all cases co-operate with the boards of guardians, and it is believed that the boards of guardians will, on their part, co-operate with local boards. The existing means for the extraordinary service now required are divided among independent local jurisdictions; medical officers in England and Wales being under boards of guardians; works of sewage and cleansing in towns, not under the Public Health Act, being under town commissioners acting under local acts; and the enforcement of orders required for the public service being with the magistrates, or municipal authorities. It is confidently expected that a common feeling will give precedence to the branch of service specially needed on this occasion, and insure that unity of action which it is the main object of the rules and regulations issued herewith to authorise and promote for the common object. Experience has shown that in the case of the actual outbreak of the epidemic, the chief measures to be relied on for checking its spread are those which prevent overcrowding, remove persons from affected houses, and bring the infected population under prompt and proper treatment during the premonitory stage of the disease. During the epidemic of 1849 an organisation for effecting these objects was brought into operation, the main parts of which were the establishment of a system of house-to-house visitation, the opening of dispensaries and houses of refuge in affected districts for the gratuitous supply of medicines, the establishment of houses of refuge for the reception of such indigent persons as appear to be in imminent danger, resident in the most filthy and overcrowded houses, the provision of temporary hospitals for the reception of those who could not be properly treated at their own homes, and in some instances the supply of tents for the removal of the most susceptible and destitute classes to a distance from infected localities. The result of this system was, that out of 130,000 premonitory cases brought under its operation, no fewer than 6000 of which were on the point of passing into the developed stage, only 250 went into the collapsed stage of cholera, or 1 in 520. But of the 43,737 cases under visitation in the metropolis, including 978 cases on the point of passing into the collapsed stage of cholera, only 52 actually did so—not 1 in 800; so that, taking together the general result of this extended experience, it appears that the proportion of cases under early treatment which passed from the premonitory into the developed stage varied from 1 in 500 to 1 in 800. No doubt is now entertained of the efficacy of this system, or of the duty of local authorities to carry it into effect on the very first appearance of this disease in an epidemic form; and, as none can tell where or how suddenly the pestilence may alight, it is the duty of local authorities to be prepared for the emergency before its arrival. Preparation will be attended with little cost: the power to act with promptitude and efficiency, when the necessity for action arises, will be attended with a great economy of money as well as of life. With reference to those precautions against the disease which each individual may take for himself, or the heads of families or establishments for those under their charge, the first in importance

are personal and household cleanliness, and the freest ventilation of living and sleeping rooms with pure air; the purity of the air we breathe being even more essential than the wholesomeness of food and drink. When the disease has actually broken out and become epidemic in any district or locality, then the one essential precaution is not to neglect, for a single hour, any degree of looseness of bowels. This symptom being commonly without pain, and so slight, that it is difficult to conceive that it can be of the smallest consequence, naturally leads to neglect; and this neglect has cost the lives of thousands. Were any additional proof of this required, it would be found in the events that are now occurring at Newcastle and Gateshead: all the medical men there bear testimony that premonitory diarrhoea is all but universal, and that life depends on instant attention to this symptom. Thus, one physician says, 'He has never seen a case without premonitory symptoms;' another states, 'He has found, in a great number of instances, where the men said they had been first seized with collapse, there had been neglected diarrhoea for twenty-four hours, or even forty-eight hours, or longer;' another declares, 'In all cases of collapse investigated, it is found there had been neglected diarrhoea.' Even in the cases in which death takes place with the greatest rapidity, the suddenness is apparent only, not real; for the fatal collapse is the final but gradual result of diarrhoea neglected for several hours, and sometimes entire days. It must then be repeated, that in any district in which cholera is epidemic, life may depend on obtaining prompt and proper relief for painless and apparently trifling looseness of the bowels. The measure of precaution next in importance relates to the proper regulation of the diet. Great moderation, both of food and drink, is absolutely essential to safety during the whole duration of the epidemic period; an act of indiscretion has been often followed by a severe attack; intemperance at such a time is fraught with the most extreme danger. During the epidemic of 1849, sudden and fatal attacks of the disease followed immediately on the indulgence of habits of drinking after the receipt of weekly wages. The intervals between the meals should not be long, cholera being uniformly found to prevail with extraordinary intensity among the classes that observe the protracted fasts common in Eastern and some European countries. The utmost practicable care should be taken against fatigue, which is a very powerful predisposing cause of the disease. Employers, and persons engaged in laborious occupations, should endeavour, as far as possible, so to arrange the amount and time of work as to avoid physical exhaustion. Warm clothing is of great importance. During the present epidemic in Hamburg, it has been found that incautious exposure to cold and damp has brought on an attack as rapidly as improper food or excess. This precaution against damp is rendered doubly important by the peculiarity of the present season. Long continued and excessive rains have, in many places, surcharged the ground with moisture, especially undrained and low-lying districts, placing, in many instances, the land contiguous to towns, and beyond the usual range of town drainage, almost in the condition of marshes. The exhalations arising from a surface thus saturated often with water, holding decomposed matter in solution, spread to the towns and affect the inhabitants, however well drained the immediate sites of the towns may be. The General Board were so apprehensive that disease would be extensively produced by this unusual and dangerous state of a large portion of the country (an apprehension which was subsequently realised by the breaking out of disease, allied in character to cholera, in 60 towns), that in their Notification, issued in December, 1852, they represented to local authorities that this calamity afforded a special occasion for administering extraordinary assistance to the poor, to enable them to keep large fires in their rooms, to protect themselves from cold and damp by warm clothing, to sustain their strength by a solid and nutritive diet, and to counteract the predisposition to disease induced under these peculiar circumstances by suitable tonics and other remedies, under medical direction. This representation was made when there was a threatening of the return of cholera; it is now among us, and the General Board would remind the affluent that the opportune supply to their poorer neighbours and dependents of wholesome food, warm clothing, and bedding, and even such

remedies (to be always in readiness) as their medical attendant may recommend for looseness of bowels, is charity in the truest sense, and may be the means of saving many lives. It is also much to be desired, and the General Board would strongly recommend, that the higher classes should co-operate with the clergy, who have done so much to promote the object of the Legislature under the Public Health Act, in making frequent visits among the poor, and impressing upon them the importance of following the instructions here laid down, with reference to which there is a perfect accordance between the College of Physicians and the General Board of Health. In conclusion, after the large experience of this disease which has been obtained since the General Board of Health issued their first Notification (1848), they can now repeat with greater confidence what they then urged—that, formidable as this malady is in its intense form and developed stage, there is no disease against which it is in our power to take such effectual precaution, both as collective communities and private individuals, by attention to it in its first or premonitory stage, and by the removal of those agencies which are known to propagate the spread of all epidemic diseases, or, where that may be impracticable, by removal from them. Though, therefore, the issues of events are not in our hands, there is ground for hope, and even confidence, in the sustained and resolute employment of the means of protection which experience and science have now placed within our reach."

THE Prize List of the "*Bedfordshire Annual Exhibition of Poultry*" announces that Wednesday the 30th of November next, and the two following days, have been appointed for that meeting.

The limitation of chickens to their own classes, forbidding their competition with the older birds, has been wisely adopted; but we should have preferred seeing the prize for a "cockerel and three pullets" wherever a "cock and two hens" are shown in the senior class. Under any circumstances, it is desirable that words should be always used in their proper meaning and acceptance, and few will question that, by the term "cockerel," a bird of less than one year's growth is denoted. "Three" pullets also serve as a distinguishing mark between the old and the young pens, which, notwithstanding the care of Secretaries in numbering the classes, are too often confounded. It may often be a matter of difficulty to match three old birds, but where pullets are concerned the task is far easier.

Black Shanghaes are omitted, and wisely too, as we think; for considering that "permanent varieties" only should be honoured by distinct classes, these have no just claim for admission, permanency of colour being the last property that could possibly be predicated to them.

Game Fowls are reduced to three classes, "White and Piles," "Black-breasted and other Reds," and "other Varieties;" this latter class, including Blacks, Brassy-winged, Greys, Blues, Duckwings, and the rest. The two last classes of the four, in the Birmingham list, have been often confused, and the present arrangement, strongly as we have always argued for separate classes for distinct varieties, is probably the best, if no greater number of classes can be allowed.

But when we come to "*Polands*," a grave remonstrance must be uttered. Why, we must ask, select the "Golden," and consign the "White-crested Black,"

"the Silver," and the other numerous, but distinct, varieties to so confused a medley? We certainly should be most unwilling to encounter the task of arbitration in this instance, feeling that we must necessarily be at a loss for points on which a just comparison might be founded. This family of fowls should, in our opinion, be thus arranged, "*Golden*," "*Silver*," "*Black*, with *White Crests*," and "*other varieties*."

Then come "*Mixed Breeds*." Now, if the object of such a class be simply to test the merits of the first class, well and good; many, like ourselves, have been convinced, by repeated experiments, that the pure breeds should be preferred, even where mere profit, independent of appearance, is alone regarded, although this first cross may, undoubtedly, prove good birds for table purposes. But it is just to the public, who look to Poultry Exhibitions as a guide to poultry economy, to warn them to go no further, for, as with Geese and Ducks, so with Fowls, the second generation will inevitably indicate deterioration, both in size and the other points, for which the parents may have been originally selected, and the further we continue such crossing, the more unfavourable the result. A prize for "*Mixed Breeds*," therefore, without the specification of this restriction, should have no place on the list.

Geese should have had premiums for both old and young birds separately; every encouragement, indeed, should be given to farmers to compete in this class, as also in those for *Ducks* and *Turkeys*. We regret, too, to observe the omission of the *Rouen* duck, the most profit-producing bird, as we think, of its race. The admission of the *Aylesbury* should have opened the door to these also, apart from those of "*any other variety*." *Turkeys*, again, should not only have had first prizes for the old and young specimens, but at least second prizes in addition.

In the regulations, we notice the adoption, in the fourth paragraph, of the old Birmingham rule—"High condition, &c., will be preferred to mere weight." For this we recommend the substitution, in all cases, of that now put forth in the list for 1853. "High condition, quality, beauty of plumage, purity of race, and uniformity in the markings, combs, and other characteristics, will, in all the classes for fowls, be taken into consideration by the judges in a greater degree than mere weight without these distinctions, if the more perfect specimens are at the same time of a fair average size." W.

THOSE intending to commence poultry-keeping, or who wish to introduce fresh blood into their present stock, will do well to attend the sale by Mr. Stevens of Mr. Fairlie's birds, on the 11th instant. They will have the opportunity of purchasing prize-birds, or their near relatives, in Shanghaes, Dorkings, Bantams, Bakies, Polands, Turkeys, Geese, Ducks, and several other varieties. Mr. Fairlie has taken more prizes than almost any other exhibitor; and the birds offered for sale will be such an assemblage as rarely comes to public auction.

SHRUBLAND PARK.

BALCONY GARDEN.—This is the name of the new terrace-garden on the west front of the mansion, where the old Italian garden stood, on the slope of the hill. The old garden consisted chiefly of nine large beds, four on each side, and one in the centre; in each of the eight side beds an Italian Cypress (*Cupressus sempervirens*) was planted in the middle. The height of these Cypresses, at the time of altering that arrangement, might be about fifteen feet. There were other large trees and shrubs at either end, and round this garden, all of which had to be removed and replanted in different parts of the grounds; but those of them, like the Cypresses, which, by their style of growth, were fit accompaniments to architecture, had to be removed to a reserve ground for a season, until the ground-work was got ready on each side of the grand staircase down the hill, and then removed back to where they now form a very striking feature to that part of the ground.

All who have had to do with planting large trees, &c., on a great scale, are well aware that this second planting is one of the most difficult trials that their credit, and the trial of their trees, can be exposed to. When a large tree is moved, if it is allowed two years, there is no great difficulty in moving it a second time, but to be obliged to remove it again at the end of the first season, as Mr. Davidson had to do in some scores of instances, is, indeed, next thing to failure; yet it has not been so with him; and one of the moves he adopted to overcome the difficulty is worth whole pages of speculative suggestion. The ground over the roots was not alone mulched, the whole plant was mulched, stems, branches, and all, as far as it could be done, without covering the leaves. A thick case of moss envelopes the whole of the large trees and shrubs, from top to bottom, to this day. Thus the heat of the sun, and the dry, parching winds, so prejudicial to newly-planted trees, and four times more trying to those newly-twice-planted ones, were so far guarded against as it can be ever done. Then, with a garden-engine, streams of soft pond water are dashed against the moss-clad tree with telling effect, and this effect remains long afterwards; for although the outside of the moss appears dry, the inside next the bark may be as damp and comfortable as possible. We, who take in our food by one opening near the top of the system, cannot endure damp covering next the skin, but a tree takes in nourishment, more or less, over every part of the surface, by invisible pores, provided the skin or bark is soft, fresh, and healthy; but if the bark is allowed to get too dry, these pores will not act; the rind gets hide-bound, as we say, and then the best roots can hardly force up sufficient nourishment for the system. Altogether, I was much struck, and very much pleased, with this application of a well-known principle, and I would highly recommend it to amateurs and others who move trees and large shrubs about their grounds. It is only from knowing the soil, the situation, and the climate so well, together with the unusual circumstances under which this part of the planting was done at Shrubland Park, that I can appreciate the *jacket mulching*, as they call it, so much better than hundreds who now flock in to see the great and striking improvements; for I found the old system of admission in full force, notwithstanding the house being full of company. No one is refused to see the gardens once a-week, on Fridays, if he applies for admission, in writing, to Sir William Middleton.

The Balcony Garden is now, as it were, part of the house; being joined to it and the inner terraces, at either end, by a rich system of balustrated stonework, in Sir Charles Barry's most florid style. The eight great beds on either side of the centre walk occupy much about the same positions, and have nearly the same

outline as the old ones with the Cypresses in their centre, but they are made so much more dignified by having rich edgings of dressed stonework. This edging is one step, or five inches high, above the gravel, and eight or nine inches wide on the top; the bed inside this is on a level with the top of the stone. The first eighteen inches of the bed is covered with the finest turf all round, so that although the whole is on a gravelled terrace, these flower-beds may be said to be on grass. After the grass comes a band of silver-sand, found in the park, six inches wide; a little walk, in fact, bounded by grass-edging on the outer side, and a box-edging next the soil and plants. Now, without looking at the flowers at all, what with the good colour of the gravel, the glare of the Caen stone balustrades all round, the rich facings to a succession of terraces, and the whole west-front of the house, with the Albert Tower in the south-west corner, white and all white, with many other flower-beds besides the eight principals, and a row of standard myrtles on each side of the centre walk in richly-worked stone-boxes, as it were; the whole struck me as the richest and most beautiful thing I ever read of; for to see such another, no one that has never been out of England could do, for there is nothing at all in this country to compare it to, much less to put into comparison with it.

This Balcony Garden being now ten feet lower from the principal drawing-rooms than the old one, and on gravel instead of grass, and also surrounded by so much stonework, the planting of it is very different from the way I used to plant it. There is not now the same necessity for a glare of strong colours, such as large masses of *Punch*, bordered by a white edging, could give. At first, the style of planting did not strike me as judicious, and for some time I could not understand the principle of it. I told this to Lady Middleton, with whom I had so often discussed such subjects, and her ladyship was so kind as to tell me the whole meaning, from first to last; also what alterations she thought would improve the design; but as I did not hint to her ladyship that I would say anything about the gardens in print, and also, that it is not lawful or gentlemanly to criticise any garden while it is undergoing alterations, I shall not describe the exact manner the beds are planted, but confine myself to a critical and historical account of the plants in use all over the garden, beginning with

BEDDING PLANTS.—The last plant that was named there in my time, singularly enough, was the very first that caught my eye on entering the conservatory terrace by the gilded gates, at the east end, and it was the *Lady Middleton* Geranium, in the centre beds of a chain pattern, along the bottom of the terrace. This pattern is divided into two parts by a fountain, between two flights of steps, in the centre of the terrace; the corresponding half of the pattern, on the other side of the fountain, is planted with the *Cerise Unique* Geranium, having nearly the same tint as *Lady Middleton*, but with a sickly horse-shoe mark in the leaf, white footstalk and peduncle, and a striped back; a very good bedder, but requires the centre of the truss to be often relieved of dead flowers during wet seasons like this, while *Lady Middleton* stands all weathers. The chain, or ribbon, which winds round this pattern, are of three plants this season; in my time there were only two—a good blue dwarf variety of *Lobelia* and the *Oenothera prostrata*. Now, *Lobelia ramosoides*, the very best of this race, is one, and the *Musk mimulus*, and a yellow Pansey, called *Malvern*, are in the place of the *Oenothera*. There cannot be less than four thousand plants of this new *Lobelia* here this season—a proof of the correctness of what THE COTTAGE GARDENER always said of it. The plant is kept by cuttings, like a *Verbena*; it has an upright, rigid style of growth; and when a mass of it is together, a very dark blue tint is produced. In this

pattern there are several small circular beds only one foot in diameter, only fitted for one specimen plant, and no flowers are wanted on it, the blaze all round, and the white sand on which the pattern is worked-out, together with the light-coloured stonework bounding the terrace, want so many green plants to relieve the sight as green beds in a close-bedded flower-garden. At first, these little beds were filled with three's and four's of the small close-growing Geranium, called *Grossularifolia*, or Gooseberry-leaf, a plant that can be made the most architectural, or symmetrical, of the genus. By growing these plants in warmth, the first winter after I left, Mr. Davidson got each one large enough to fill one of these beds. I never saw anything more cleverly done, or better suited for the purpose; and the same plants will last a dozen years, at least.

There is another Geranium near this pattern, called *Liliputian*. It looks like *Tom Thumb*, but by using spring-struck cuttings of it, the very smallest bed, in a close, intricate pattern, may be made with it, as then it will only rise a few inches high. A delicate, purplish-pink, seedling Geranium of mine matches *Liliputian* to a hair, the name of it is *Caroline*; but I fear it is not in the trade yet, although seven or eight years old. It was called after Lady Caroline Courtney, who admired it above all the seedlings in the place. *Queen of May* Geranium is to be discarded here, except as a green plant for neutral beds. There is an excellent new variety here, of the old variegated Scarlet Geranium, with crimson flowers, and a softer leaf than the old one. Whether it will answer for the shot-silk bed has not yet been proved; but at a venture, I would suggest, equal quantities of it and the old one as better than either, with the *Verbena venosa*, for that style of mixture. There is also a very strong-growing Geranium, of the *Nosegay* breed, with crimson or dark scarlet flowers, called *Mrs. Vernon*, a lady who is famed for her taste in flowers and flower-beds. This will match with the *Salmon* Geranium in size and growth. This makes the fourth *Nosegay*. Another good bedder of the fancy class, after the *Jehu* breed, but very dwarf, is called *Sir William Middleton*. I never said much about this seedling as a bedder, which is one of my raising, as I only flowered it one season. Mr. Fleming told me it was the best of that class at Trentham; and I saw beds of it here, at Shrubland Park, doing remarkably well for a fancy, and it is one of the favourites. All the bedders of this class which I used to write about from this place are still kept up, and a few more added to them. *Diadematum rubescens*, and *regium*, with *Lady Mary Fox*, are the best of them. One called *Ignescens*, in the way of *Quercifolium*, is the best of the strangers to me. A lilac *Unique* did not strike me as particularly good, but I saw a trailing variety of oak-leaf, and of the *Capitata* section, with deep lilac flowers, and a large dark blotch in the middle of the leaf, which is the best rock-plant among all the Geraniums, and, if it would seed, a regular treasure, to work out more varieties in the style of *Unique*. Why should we not have a true *Unique* or *Capitata* in every tint peculiar to the family? The best white-flowered Geranium, of the scarlet breed, is *Hendersonii*, a horse-shoe leaf, and strong habit. My *Shrubland Cream* and *Tricolor*, with *Boul de Nieve*, they grow in pots for the conservatory only. They also keep pots of *Cherry Cheek*, *Salmon*, *Compactum*, *Nosegay*, *Punch*, *Tom Thumb*, *Shrubland Queen*—one of the best pot ones—*Cerise*, *Unique*, and a few others, for coming into the conservatory late in the autumn. All these, on Harry Moore's plan of never shaking off the old soil, answer the purpose with little trouble, and come in very useful when flowers are scarce. They propagate all the bedding Geraniums in the open soil, in temporary cold-pits, from which they are potted before the frost comes, and they find autumn-struck cuttings of *Oenothera prostrata*,

Cineraria amelloides, and *Salvia chamædrioides*, to flower better than from spring cuttings, while *Petunias* and *Verbenas* flower best from early spring cuttings.

Another lesson which the great alterations taught them is that it is not good to make new beds *all of new or fresh soil*. A very common practice which defeats the best gardeners. Plants of all sorts get too leafy, and shy of bloom, when the soil is all fresh. It can never be affirmed too often, that the first four inches of a flower-bed cannot be made too rich, so that the plants take it at once, and start away, as if they were forced with bottom-heat, but no sooner than they cover the bed, than the roots ought to strike down into poor soil, or old exhausted soil, so as to give a sudden check to rampant, leafy growth, and throw the whole into flower at once; the lower and more damp the situation, the more is this check needed, but even on the highest and more dry situations it is not safe to make the beds of the same richness throughout.

Our Irish correspondent, who sent me a bushel of the tubers of *Tropæolum tuberosum*, may be glad to hear that they have been of great use at Shrubland Park for the last two years, for clothing new ground, and for training up against places where more permanent climbers would not cover so soon. A great number of them flowered from last October down to Christmas—a very unusual thing in England. The *Eurotia speciosa* is also a common plant here now, and of the two *Zelinda* Dahlias they have an immense quantity. The dark one, about two feet high, comes in admirably as specimen plants, at regular distances, in front of white terrace-walls, and the scarlet one, an extremely free bloomer, and about three feet high, is used in the centre of several of the best beds. There is a row of each also in front of a long Dahlia border, where six or seven rows of the more showy kinds are grown together on a sloping bank, where they always make a great show; the dark *Zelinda* being the dwarfest, makes the first row, and the scarlet comes in the second row. The effect of this arrangement is so good, that it is determined for the future to have each row of one kind of Dahlia throughout the whole border. For flower-gardens, I am convinced this is the most telling way in which Dahlias can be grown; the usual way of mixing Dahlias in beds or long borders, is no better than the old way of planting herbaceous plants, as compared with the bedding system, if the colours are well contrasted or shaded off, and the heights of the plants are so arranged as that each row is a little higher than the one in front of it. I am quite sure there is no other way by which Dahlias can be shown to more advantage. A border, one hundred yards long, with a little rise at the back, and wide enough to take seven rows, would be of all other ways the best; but any kind of bed will do if the centre is kept high enough to assist the gradations of height. On level ground the thing cannot be done so well, for when the height of the plants reach to four feet, it is not easy to find suitable colours to make up the remaining heights. If the stock is short, three or four whites, yellows, &c. might be used in one row, provided the heights are exactly the same.

VERBENAS.—*Hamlet* is now planted with *Heliotrope*, instead of the *Duchess d'Aumale*. I never saw this mixture more perfect than on this occasion; sixteen beds of it, as neutrals, in one close arrangement, look as gay and rich as can be, without interfering in the least with the colours and shades all round. This is in the "Fountain Garden," the best planted arrangement of the heights, colours, and neutrals, in Europe, perhaps. All the principal colours in bedding plants have three kind of plants, in three degrees of height, to represent them in this arrangement, and except the scarlets and yellows, all the rest are planted in shades. *Verbena Montonii*, a large, cupped, dark crimson flower, is used,

or is to be used, for mixing with Scarlet Geraniums. *General Brea* is the best dark crimson for beds, doing away with *Louis Phillippe*, *Barkerii*, and all that strain, in this garden, at least. *Danecroft Beauty*, a light salmon, with large yellowish eye, is one of the best of that shade; and for a real good habit, in pink, they have gone back to *Miller's Favourite* again, and for closeness and bed-habit they find it the best. The next shade in purple, after *Emma*, is got in one called *André*. D. BEATON.

PITS AND SMALL HOUSES VERSUS LARGE ONES.

MANY enquiries, and statements, written and verbal almost as opposite as the poles, have induced me to say a few words on this subject *now*, when many are thinking how they can manage to secure their tender favourites over the winter. The lovers and patrons of gardening, if we judge from language and action, may be divided into three classes. The first are those who *ought* to go from home, were it for nothing but taking a notch out of that self-esteem that led them to imagine that they were unapproachable. The second are those, who, if they wished to be contented and happy, would never go from home, as they never can see anything else more beautiful, more magnificent, and more extensive, without a strange mingling of admiration and envy, on the one hand, and an undue depreciation of the beauties they really possess, on the other. Woe to the blue aproners in such establishments! Do what they will, there are points to be aimed at, which, with the means at their disposal, it is possible they can reach. Add to the numbers of such patrons, and give a goodly increase to our Chatsworths, our Trenthams, and Crystal palaces and pleasure-grounds, as at Sydenham, and it needs no prophecy to tell, that ere long, the bright, sunny spots of mere ornamental gardening, clustering around cottage and hall, entwined with the purest aspirations of the young and the old, would be devoted to purposes of stern utility, or left to become wildernesses of neglect. A third class, and let us hope so numerous, that, in comparison with it, the others will weigh merely as the dust in the balance, is superior to envy in all its shapes; thoroughly appreciates floral beauty and good gardening, wherever it presents itself; is anxious to find something to admire, and something to learn from, whether visiting the garden of the tradesman, or the demesne of the nobleman, and goes home not dissatisfied with its own little paradise, but with the resolution to render it, if possible, still more useful and beautiful. If such a class have many little doubts and uncertainties how they had better act under their circumstances, what a pleasure to have the privilege of men trying to resolve them.

Directions have previously been given for forming *turf or earth-walled pits*, as being the most economical and useful for window gardeners, and saving bedding plants over the winter, as, when provided with a wall-plate and sashes, the earth wall is a better non-conductor than a brick wall; and this is especially the case when the outside of the wall, at least, is of a sloping form, and rendered waterproof with a coating of concrete, or a thin layer of tar, covered with sand or gravel. Unless in an emergency, however, I would not recommend forming such a pit *now*, as it is best done in spring, so as to consolidate during summer, and then have the walls rendered waterproof when dry. Not that this waterproofing is essential, but it is a great preventive of damping, and keeps many kinds of vermin at a distance. Such a pit would be useful in winter, for preserving vegetables, as well as the hardier ornamental plants, as Scarlet Geraniums, Penstemons, &c., if furnished with waterproof covers instead of glass, these covers being tilted or removed in fine weather. I will

endeavour to meet as many wants as possible, by answers to the following questions.

1st. "How am I to proceed? I want a small brick pit to keep cuttings, bedding plants, &c., over the winter. I can have no artificial heat. I am told by one, that the deeper I go, the warmer my pit will be; by another, that the less I sink, the more secure the plants will be. Is there not something contradictory in all this?" Not at all. Mere *warmth* and security, as respects vegetable life, are not identical. The same may be said of animal existence. A man may be frozen to death in a cold night; he may, also, be smothered in a close room, or wrapped in warm blankets. A house underground, in winter, would be warmer than one above it, just because the radiating heat surface would be lessened, and because, at that time, there is more radiation than absorption. A pit, or plant house, partially sunk underground, is warmer than one of the same depth wholly above it, because less of the walls are exposed to the atmosphere. Of course, the radiation from the glass will be the same in both cases. Such a pit, on the other hand, will be cooler in summer. But, even the warmth in winter will not be in proportion to the depth of wall sunk, unless means are taken to keep the ground outside the pit dry and free from frost; the first, by concreting or tarring; the second, by loose litter in cold weather. With such remedies, and the ground sloping from the wall all round, warmth and security may be obtained after the walls are thoroughly dried. The danger in all such pits in winter, is from the close, muggy atmosphere that accumulates at their bottom; the fertile source of all fungus broods, termed damping; and the very sinking beneath the surface makes it difficult to dislodge this stagnant air by one more rarified and pure. The higher forms of life, whether vegetable or animal, unless when in a torpid state, must have access to light, and a pure atmosphere. Now, by sacrificing a little of this muggy warmth, these necessary conditions to health will be best secured by a pit above ground, the surface of the bed within being a little higher than the surrounding ground, and that made to slope from the walls, so as to throw off all wet. If there are ventilators in front, on a level with the bottom of the pit, they will be more effectual in dislodging damps than any mere opening of the sashes. With such ventilators open, and the sashes tilted behind, a draught of air is secured to the bottom even of the cutting-pots. Such a pit, for small plants and cutting-pots, may be from five to five-and-a-half feet wide, from eight to twelve inches high in front, and thirty to thirty-six behind. If the ground outside is banked up within a few inches of the front wall-plate, and then well tared and gravelled, no spouting will be necessary, and no wet will penetrate. In winter, great care should be taken in using any fermenting material round the walls. I greatly prefer, for the ends and back of such a pit, a thickness of two or three inches of dry straw, firmly secured by cords. In such a shallow pit, great care, however, must be taken to guard against sudden frosts, and against uncovering too rapidly when fine weather comes.

In a frosty morning, after a mild night, I have had young plants, stiff as pokers, at twelve inches from the glass, while those at eighteen inches distant were not at all affected. Covering up until completely thawed was the remedy in all such cases. Old readers will be well aware that the plants usually kept in such pits will receive no harm, though covered up in bad weather for some time, day and night, provided the internal atmosphere is rather dry, and frost has been excluded; but yet, the temperature so nearly approaching the freezing point, that vegetation, so far as extension was concerned, was at a stand still. The modes and principles of protection have already been fully discussed.

2nd. "I contemplate building a brick pit, in preference to having wooden boxes. I cannot heat it artificially with fire heat. I want it for many purposes, as I can only have one; such as keeping cuttings and small plants of half-hardy plants over the winter; propagating by means of dung-and-leaves-heat in spring; starting and growing fair-sized Fuchsias in March and April; and using it for Melons and Cucumbers in summer, &c. I propose to have it six feet wide, front wall three-and-a-half feet in height, back wall six feet, and fully half of these heights under the surface. Can I, by any simple process, make one pit, say eight or nine lights in length, answer all these purposes, either at the same time, or in rotation?" By exercising a little judgment, there will be no difficulty in the matter. By means of moveable wooden partitions, made of light half-inch wood, to fix under the rafters, I have had, in such a sized pit, four or five divisions, differing in temperature and the amount of atmospheric moisture. When one end has been used as a hotbed, the other end has been as cool as possible by the free admission of air. Such half-hardy plants as you speak of, however, especially when in a young state, must be tolerably near the glass in winter. This you can easily provide for when building your pit. For instance, at the height of two feet from the set off above the foundation, in building your nine-inch wall leave a row of bricks all round, back and front, jutting out beyond the perpendicular inside, from three-quarters to a full inch, and do the same again when the fruit wall is from eight to twelve inches from its proposed height. These ledges will hold securely any strong boards, half-an-inch shorter than the width of the pit, so as to make a platform nearer the glass. By this means, being able to make a higher or lower platform at pleasure, you will be able to accommodate three different sizes of plants at will, just by putting on, or taking out these boards. Besides, we find that many of our friends, when once they get a pit of this kind, must needs have a small stage near the house, in which to place some of their favourite plants in summer. Now, supposing that this stage was to be formed, how easy to make it a little less in width than the width of the pit, and with the hypotenuse line of the shelves, proportioned to the slope of the rafter. If the stage was very low, it could be raised on blocks to the suitable height. Standing on these transverse boards, or on the shelves of this stage, small plants and rooted cuttings would be safer from damp, and from sudden alterations in the weather, than when standing upon the bottom of a shallow pit.

Such a stage, however long, should be made in lengths of one, two, or more lights, so as to be easily moved. A friend, who had such a stage made in a rough, but useful manner, which he used for various purposes in summer, instead of using it for his cuttings in a somewhat similar pit last winter, preferred placing them pretty near the glass, on the top of soil in which cucumbers had been growing, there being a fair portion of rotten decomposing manure beneath. What with damps and sudden frosts, the spring saw little but a perfect wreck. The initiated keep myriads of plants in such circumstances, but they know the care that is requisite. What with the watering, however carefully given, that finds its way into the soil (unless every plant is lifted out, when watered, and allowed to drain before it is replaced—a capital plan where there is no fire-heat in winter), and the vapours intensely rising from the decomposing manure, the plants are pretty well as liable to damps as they would be on the bottom of a sunk pit, while their raised position, under these circumstances, confers all the disadvantages of sudden changes, which a shallow pit, built wholly above ground would yield, without the compensation of secured dryness. On such an open platform of boards, or a still opener stage, with

shelves from back to front, damping could only be the result of careless watering, or other mismanagement, unless the atmosphere was long in a foggy, watery condition; and a sudden frost would be so far guarded against, that the plants could suffer little, until the whole enclosed body of air had been brought down to the freezing point. A deep pit, therefore, besides the many purposes to which it may be applied, if not filled up with a solid substance, is just like a large house, less liable to sudden alternations than a shallow one. In such a pit, open at one end, and filled up to within two feet of the surface at the other, with earth, &c., we have seen, in a sudden frost in spring and autumn, the glass quite clear in the former case, and encrusted with ice and hoar-frost in the latter. Of course, the means of careful protection must be attended to. I never see such a pit, and am told, "that is all the glass at command," without a vision of a small boiler, and two three-inch water pipes, rising before me. If that was too expensive, and a flue elsewhere would be in the way, why not have a small furnace, connected with a four-inch flue, in the end and front walls. Two bricks placed on edge, on a nine-inch wall, would leave a sufficient cavity. Nothing more would be necessary than care in forming the joints, placing a thin slate above for a covering, on that a layer of mortar, then a row of bricks, lengthwise across, and then build in the usual manner. You could then easily dry your atmosphere in the dulllest weather. Of course, if above ground, a considerable portion of the heat of such a flue would be dissipated in the open air. If in the wall below ground, the earth would absorb a portion; but if below ground, and a cavity of a couple of inches secured, opposite the flue-brick, very little heat would be absorbed or lost. I have tried, and found that these narrow flues, if there is a good rise from the furnace bars, draw with such rapidity, that, unless in cases of gross carelessness, there is no chance of smoke or soot finding its way into the interior. The expense of a flue, in such a position, would cost little or nothing; and the expense of a stock-hole, furnace bars, and doors, would soon be repaid, in the saving of covering and its consequent labour.

R. FISH.

(To be continued.)

THE CROCUS.

(Continued from Vol. x., page 463.)

HAVING, in my last, described the culture of bulbs that are large enough to flower, it only remains to give some instructions what to do with the offsets and small bulbs, and a few remarks on raising new varieties from seed: and lastly, a few lines on forcing them.

SMALL BULBS AND OFFSETS.—At the time of taking up the bulbs, these should be separated at once from the flowering bulbs, keeping the different colours and varieties distinctly separate; and it would be desirable, also, to divide them again in two sizes, because the large size will sooner flower than the very smallest. Prepare a bed for them in an open part of the garden; manure it well with well-decomposed dung, and, if the soil be naturally heavy, add a liberal allowance of sand; dig deep, and thoroughly incorporate the manure and sand with the soil, then draw a drill, two inches deep, across the bed, and six inches apart; plant the larger size first; place these singly, at about an inch apart in the row. The small fry and yearling offsets may be sown in the same way and thickness as you would sow Marrowfat Peas. Place distinct labels to each variety, so that there may be no mistake at the time they are taken up. Cover bulbs so planted and sown with some roughly-sifted soil of the same quality as that of the

bed; then level the whole bed gently with a short-toothed rake. This planting should be done, at the latest, by the middle of October, or even earlier.

In the spring, when the leaves appear, stir the soil between the rows, to allow the warm showers to enter freely, and to prevent the soil from cracking. Keep the bed clear of weeds and slugs, which will be all the care they require till the leaves decay. Should any flowers appear, nip them off to strengthen the bulbs, the great object being to increase their size. Take great care the leaves are not injured, for they are quite as necessary as the roots to ensure the increase of size in the roots. One grand cause of the deterioration of the Crocus is the cutting off the leaves as soon as the flowers decay; a practice too often followed, because, forsooth, they are unsightly, or, perhaps, in the way when other plants are required to be planted near them. I have seen even gardeners that ought to have known better, for the sake of what they called neatness, tie up in knots the leaves of the Crocus in their flower-borders. It seemed as if such men had an indistinct idea that the leaves were of some use; but how they could exercise their functions when tied up so was a paradox above my comprehension. In this nursery-bed the leaves will not be unsightly, because the bed will not be in the dressed flower-garden, and, therefore, they may remain till they quite decay; then dress them off, and leave the bulbs in the bed, for they require two years to bring them up to the full size, especially the smaller size. In the autumn, give the bed a thin dressing of short dung, to supply fresh nutriment to the soil. In the following spring, as soon as the leaves are fairly above ground, stir up the soil between the rows, mixing the dung with it; and as soon as the leaves decay, take up the roots, which will be found to be almost, if not quite, as large as the imported ones from Holland. Sort them over, and follow the same process with the small bulbs, either in the same bed, renewed with fresh earth, dung, and sand, or, which would be preferable, plant them in a fresh place entirely.

Mice are very partial to the Crocus roots, and where they abound make sad havoc with them. Traps must be set for them, or a good cat or two kept on the premises to destroy these little mischievous pests.

RAISING VARIETIES.—There are now a considerable number of very superior varieties of these roots, larger in size of flower, better shaped, and finer colours. This improvement has taken place chiefly among the two-coloured varieties, both in stripes and coloured edges. The older divisions of white, blue, yellow, and striped, are now much extended, and, no doubt, may be still more improved by judicious hybridizing. Whoever desires to improve the race of any flower must not leave that improvement to chance. He must first study the object he wishes to effect, whether increase in size, brighter colour, or more perfect form, and impregnate his flowers accordingly. Size and form should be sought for in the male parent, and brighter and more distinct colour in the female. To make assurance doubly sure, the pollen cases of the flower to be operated upon should be cut off, and the stigma dusted with the pollen from a flower with the desired properties; then cover such impregnated flowers with some fine gauze caps, to prevent insects coming in contact with them. The seed ripens quickly, and the seed-vessels soon burst if not gathered in time. As soon as the cases, or seed-vessels, turn yellow, gather them, and lay them on a sheet of paper, in a dry but shady place, so as to harden the seed gradually. When dry, clean the seed, and sow it in pans or boxes rather thickly, giving neither heat nor much water. The seeds will germinate and come up in the spring, and they must remain in their box or pan till the following autumn. Then sift the soil

through a fine sieve, and carefully pick out the small bulbs, for small they will be. Plant them in a nursery-bed, like the one described above, and allow them to flower there. Mark all that are decidedly improved, and cultivate such with great care till a stock is obtained.

FORCING.—Perhaps there is no bulbous-rooted plant that forces so easily as the *Crocus*. Pot them in rich soil, in 5-inch pots, placing five or six bulbs, according to their size, in each pot. Do this early in October, and place the pots under a bed of coal-ashes till they form roots; then remove them into a gentle heat in batches, and the bloom may be extended so till they flower in the open air. There are fanciful pots, in the shape of hedgehogs, globes, &c., with holes made at the top and sides. Where these are used, the inside should be filled with rich earth, and a bulb inserted opposite to every hole. Place them in a frame, or on a shelf in a greenhouse, and the plants will force their leaves and flowers through each hole. All bulbs so treated and forced are injured thereby, and will require a year or two in the nursery-bed to renew their size and strength.

T. APPLEY.

JOTTINGS BY THE WAY.

(Continued from Vol. x., page 483.)

ABNEY HOUSE, Cheadle, near Manchester, the residence of R. Watts, Esq.—I visited this place last year, and mentioned, in my "Jottings," that Mr. Watts had purchased, at Elvaston Castle, some large *Araucarias*, fifteen feet high, removed them that distance, and with success, not having lost one. I found them this year making good growths, thus proving that the practice of nurserymen keeping these fine conifers in pots, or tubs, is decidedly unnecessary, and positively injurious, for the simple reason, that their roots are interlaced, and wound round the inside of the pots or tubs, that they can never spread out and take firm hold of the soil to support the trees when they attain any magnitude. This year, Mr. Watts has added several more to his stock, and they appear to be doing equally well. Some *Deodars* have not done quite so well, especially large ones. The intelligent gardener, Mr. Sturdy, said it was owing to the unfavourable weather in early spring, accompanied with strong winds, and besides being so exposed, for the place being entirely a new one, the trees for shelter are, as yet, too small to afford any. Some *Pinus Austriaca*, large plants, on the other hand, have done quite as well as the *Araucaria*, and also some *Pinus Cembra*. This difference of bearing removal such a great distance is of some importance to planters of new places. The *Cedrus Deodara* should never be moved at more than seven or eight feet high, unless the situation is well sheltered from high winds. When I called this year, about the end of August, Mr. Sturdy had just removed some large Yews and Hollies, which appeared quite fresh, and likely to grow. He always waters all fresh-planted trees liberally.

KENNEL PARK, St. Asaph, North Wales, the residence of R. Hughes, Esq.—Mr. Mountford, an old friend of mine, is now gardener here. Under his management, the place, in gardening matters, is greatly improving. I alluded, very lately, to the Peach-walls here being covered with glass. I had the satisfaction to see a fine crop of fruit just ripening, in consequence of that covering, confirming very strongly my opinion of its great utility. Since I was there, I have been called upon to give my advice on the matter. One place I found a good border made, Peaches planted, but no success; in another, the Peaches were old, in a gravelly soil, near a river. In both cases, the Peaches were miserable, and I believe it is intended to cover the walls with glass. A correspondent writes for information; also

including what covering a wall will cost. This I shall ascertain shortly, and then will answer the query. Our seasons are now, and have been for some years, very unfavourable for the Peach. The winters have been mild, and the summers cold; hence, the blooms started early, and were injured, and the cold summers prevented the wood from ripening. Just glance at America; there the winters are much more severe than here, but then the summers are much, very much hotter. The consequence is, the Peach being hardy enough to bear severe frost, has a hot sun to ripen the wood, and thus enable it to bring forth good fruit. I trust these observations will be taken in good part. I know many gardens that do produce good Peaches; but what I contend for is the uncertainty of the crop without a great amount of care in protecting the blossoms; whereas, covered with glass, success is certain every year. Kennel Park is situated close to the sea, but considerably elevated. I noted, in the pleasure-ground, several fine specimens of *Cedrus Deodara*, one measured nearly thirty feet high, well clothed with branches, which covered a space thirty-six feet in circumference, without a single shoot injured by the sea breezes. Of Irish Yews, there were several specimens twenty feet high.

The flower-garden was rather unique, and well furnished with flowers on the grouping system. A bed of *Calceolarias* was very imposing; *C. viscosissima* in the centre; *Kentish Hero*, in good breadth, around it; and next, a thick mass of the yellow *Kayii*, edged with the dark *Sultan*. Then another bed of the best *Phlox Drummondii*, edged with *Cupheas*, had a good effect. Entire large beds of *Ageratum*, *Salvias*, *Tall Lobelias*, *Scarlet Geraniums*, &c., rendered the scene a gay one for flowers. The flower-garden is very properly placed in front of a long range of plant houses, several of which have Vines up the rafters. The plants were well in bloom, consisting chiefly of the gay fancy Geraniums, Petunias, *Salpiglossis*, a tribe undeservedly neglected; Fuchsias, *Thunbergias*, and many large pots of the pretty *Rhodanthe Manglesii*.

The Grapes were good, especially the *Black Hambro*, which were really black, and several rafters of the delicate Grapes, the *Frontignans*, were well cropped, and of good quality. I saw some very long bunches of an excellent black Grape, not half so much grown as it deserves, I mean the *Black Prince*. This always comes black. Mr. Mountford has just had a house put up on purpose for the *Alexandrian Muscat*. He planted them last May, and they have nearly reached the top of the house. This fine Grape should always have a house to itself, it requires a higher temperature, and a drier one when ripening than any other Grape. The hardy fruit-garden here is very productive. The quantity of the better kind of Pears is astonishing. I never saw trees so loaded with fruit. Apples were also in abundance, though Plums were not so plentiful. T. APPLEY.

(To be continued.)

THE SUCCESS AND FAILURE OF TENDER WALL-FRUIT.

NOTWITHSTANDING the advantages which climate and situation undoubtedly afford to many of our more tender productions, yet it must not be understood that a position in "the south" is all that is required to ensure successful culture; on the other hand, many of our most useful garden products are obtained in greater perfection, and embrace a longer season of utility, in the northern parts of the kingdom than they do in the south of it, except when placed under peculiar circumstances in the latter district. This may appear strange to those who imagine that a journey southward ensures a pro-

gressive improvement in everything which the earth brings forward; for certainly many things do improve as they are removed to a warmer climate, but this is not always the case. Certain fruits, as well as vegetables, prefer a cool atmosphere, or, it may be, a cool soil to grow in; and this is accomplished by the difference which a few degrees north will give, other circumstances being the same. Now, in mapping out a country in regard to its productions, there are other considerations also to be borne in mind, as well as the origin or native place of the plants we wish to cultivate; for the latter do not always prosper in the greatest perfection by being grown in the same latitude as where found wild; on the contrary, other circumstances seem to govern them as well.

The common garden *Carnation* is said to be only an improvement on a wild plant indigenous with us, yet it has, by cultivation, become so delicate as to be scarcely able to endure our winters. Other instances of the same kind might be adduced; but we have, on the other hand, evidences wherein cultivation has hardened the constitution of plants, so as to enable them to fulfil a certain purpose with us, which they at one time seemed incapable of doing. The tender fruits of Asia, by undergoing successive hybridizing, or, more properly, production and reproduction from seed, have been brought to accommodate themselves so far to our climate as to ripen their fruit in a degree more or less approaching perfection as the circumstances in which they were placed allowed them to do. Now, it cannot for a moment be supposed that the varieties of Peaches from their native country, could, if introduced here, compete at once with our *Royal George*, *Noblesse*, and other established varieties, which, having become naturalised with us, perfect their fruit, in most seasons, when placed under the circumstances that the Peach is justly entitled to. But there are certain apparent anomalies in connection with this fruit which may, at first sight, appear strange, but which, when the matter is fully explained, appear less extraordinary.

In addition to the fact of there being no improvement in the culture of the Peach during the whole of the present century, we may also add that a considerable portion of the best fruit is produced in the north of the kingdom; and, testing the aggregate of seasons, the quantity and quality of those grown there are fully equal, if not superior, to those grown under the more genial climate which the southern counties enjoy. This is sufficiently strange, considering the tree itself is from a district where there are sharp winters, to be sure, yet, where the summers bear no comparison to ours, for the heat which they furnish, and from whence so many plants are introduced, incapable of standing our winters, as to lead us to enquire if there be not some other cause as well. This will be found to arise, in a great measure, from the extra care taken of the tree, for in the far north it is regarded in the light of an exotic; while, in more favoured latitudes, it is left almost as much to its own resources as if it were indigenous. It is this state of things which makes the difference. The cold, short summer of the north is met by greater facilities being given to the tree to mature not its fruit only, but its wood also, and corresponding care being taken of its blossoms, when out, and greater care in extirpating the various vermin with which it is at times attacked, are all points in its culture which so often more than counterbalance the advantages which a southern latitude give, when not assisted, in other respects, by any of the means pointed out.

As there are many points, all bearing on the welfare of the Peach, let us examine them individually, and see in which way each one conduces to the general well-being of the tree. In the first place, we will slightly

advert to the situation it is likely to be occupying in the respective places that may be south of the Thames, or north of the Tweed; and, in the former of these, we often see the tree struggling under difficulties which leave no hopes of success; while, in other cases, it is denied that assistance without which it is vain to look for its well-being; in fact, it is to be found in all aspects, unless, perhaps, due north; and very often its position is quite as bad as being against a north wall, by some high intervening crop, as Peas, &c., depriving it of all sunshine. At other times, it may be seen planted against a cottage, or other building, where the drip from the eaves has the full privilege of cooling down whatever warmth it might in other respects have derived from its position; an equal fault to all these, is the severe cropping to which the ground on which it is planted is also subjected, and the corresponding denial of a suitable return of food; all these reasons, and many others which it is needless here to mention, tend to check that advantage which it would otherwise possess over its more northern competitor; consequently, we see at some of our Metropolitan shows, and other places, fruit from the north at least equal to what is often produced nearer home. That some better care is required in perfecting that which is so far fetched we will not here deny; but, that when once worked into a system, is less expensive than might be expected, and the results will, in most instances, justify its being carried out. However, the manner of doing that, as well as further remarks on the growth of our tender wall-fruits, must be left for another opportunity.

J. ROBSON.

ON THE CULTURE OF THE MELON.

THERE are few plants which come under the gardener's care that require more attention than the Melon to produce a good-flavoured fruit; and more particularly so when grown in the common frame by the aid of dung alone. Yet it may be done, though certainly not with so little trouble as when grown in a house heated with hot-water, and the plant trained under the roof. Neither do we think they possess the same flavour from the dung-bed as from the house referred to, and it is evident very early or late fruit do not. However, there are only few who have the advantage of such a house; therefore they must make the best of what means they have. And we will here endeavour to point out a few of the principles connected with its culture, as we have grown them in the dung-bed, and also in what are termed M'Phail's brick pits, or those built on the pigeon-hole fashion, and heated by linings of hot dung, and in these both Melons and Cucumbers did well; but the labour attending them was immense.

We next had the privilege, at another place, to grow them in one of the old-fashioned, high-roofed houses, heated by a flue in the outside wall. In this house were two beds, four feet deep, which were filled every spring with tan, and the soil placed thereon, and when warm, the Melons planted. The plants in the back bed were trained up under the glass to the ridge, and those on the front bed were trained on the surface of the soil. And although the front bed contained double the quantity of tan, and the plant occupied double the space of surface in the house, the plants trained up the back lights produced better fruit, and in greater abundance.

Now, this was an instance which proved very clearly the advantage of the trellis system, and, altogether, was much less trouble than the bricked pits. We next had the privilege of trying the merits of a house that was built expressly for the purpose, and heated by hot-water, which produced bottom-heat as well as top, and in this they did extremely well, as the house was a span-roofed one, and the plants all trained up beneath; which plan we would recommend all to follow wherever it is practicable. However, we will leave this to your option, and proceed with its culture. Beginning, first, with the common frame and dung-bed, though we by no means recommend it; but we fear the majority of our readers have no other means; that in order

to meet each one's case it becomes necessary to introduce it here. And as the culture in the frame embraces almost every point to be regarded when grown in the house, the same will answer for one and all.

We will, then, suppose that a sufficient quantity of heating materials are at hand, and that it is fresh from the stable, which, if so, will require to be turned over several times, to sweeten, or force off that foul steam so injurious to vegetation; and if a good quantity of oak leaves can be got to mix with it, or when it is finally made up into the bed, they will help materially to effect the purpose, as well as to produce a more gentle, uniform, lasting heat, which is a very important point in the culture of this plant, and one, which, if disregarded, will most probably cause a failure. This point considered, the bed may be made up, five feet high at the back, and four at the front, mixing well the material as you proceed, and when finished, place the frames thereon, and let them remain till the heat arises, when it will soon be known if any foulness still remain, which, if there be, push down the light a few inches till it has passed away, and then cover the bed a few inches thick with soil, and two or three green turf turned upside down, under the centre of each light, and upon which place a barrowful, or a little more, of good turfy loam that has been laid up for twelve months, and of rather a stiffish nature than otherwise, as this kind of soil retains moisture much longer than one of an opposite nature, and, thereby, requires somewhat less attention in watering; otherwise, we have grown as good Melons in light loam as in a heavy one. But there is one thing we particularly object to, which is a fine-sifted soil; for such, when it becomes dry at the top, will not readily take in water, excepting at certain places where there is a direct passage that it pours through, and leaves the interior of the surrounding soil quite dry, which, of course, is very injurious. Therefore, we will suppose this to be regarded, and that a stock of young plants were in preparation in a single-light frame made up three weeks previously to the fruiting-bed. That the seed was sown in pots, and either plunged or not, according to the heat of the bed; and when the seed-leaves were pretty well expanded, they were potted off into five or six-inch pots, placing two plants on opposite sides into each pot, using the same kind of soil as directed for the fruiting-bed, or it may be a little more porous, but taking care to warm it to, or a little above, the temperature of the frames, previously to use. Give a very little water after potting to settle the soil, and plunge the pots in the bed, and keep the hot sun from them for a few days, till they have resumed their growth when a little air may be admitted in accordance to their growth and the state of the external air, avoiding, at all times, cold draughts, as fewer plants are sooner cut off by that means than the Melon. They are also very impatient of too much water, and too much confined steam, which dung-beds are subject to, yet they like a moist atmosphere, providing it is not stagnated. If they have done well from the time of potting-off, they will, in about three weeks, be strong plants, and ready to transfer to their fruiting bed. And in doing this, be careful not to let any cold winds blow upon them. Turn the plants carefully out of the pots, and insert one into each hill, covering and pressing the soil slightly round each ball of earth, and give a gentle watering to settle the soil, and shade from bright sun till they begin to grow, and after, if they seem to require it. Air must be admitted as they begin to grow by propping up the lights at the back, and if the air be at all cold, a mat or piece of canvass should be hung over each opening, to prevent it entering so freely in a body; and however many lights there be, we prefer admitting a little air to each, in preference to admitting the same amount at one or two.

As the plants progress, they will require watering, earthing-up, stopping, and setting the fruit. Stopping, we think, is often done too soon, that the plants are thrown into fruiting before they have power to nourish one. And another reason why we object to early stopping is, that it causes a host of stems to spring from the collar of the plant, and is so thick that neither sun-light, or air can enter; that water gets collected, and the consequence is, the collar of the plants begins to rot, and, perhaps, causes death before the fruit is half matured.

We stop them when about a foot or eighteen inches long,

according to the strength of the plant, and allow two main shoots only to each plant, training one towards each corner of the frame, and when they have grown a considerable length we stop them again. This causes them to show abundance of fruit, which we take care to impregnate as the blossoms expand, and at the same time, or previously, we stop the lateral one or two joints above the fruit, and as soon as it can be seen which fruit are swelling-off, we select one of the best-shaped to each main shoot, and cut off all the others. Thus allowing two fruits to each plant, and four to each light.

They will require rather liberal watering during their swelling period, but which should be regulated in accordance to the weather, and the situation in which they are grown. As a general rule, water in the morning, and not within six inches of the collar of the plants. Warm it to the temperature of the frame, and give no more at one time than will just moisten the soil through; and as the fruit is becoming ripe withhold it altogether.

Endeavour to keep a moist atmosphere at all times, excepting when the plants are in flower, and the fruit is becoming ripe, and particularly mind to keep a uniform, gentle heat and moisture at the root, and take care to give a little air early, when the sun is powerful, otherwise, while the underside of the leaves are wet, they are liable to get scorched. The red-spider is sometimes very troublesome; but its appearance is generally owing to an undue amount of moisture both at the roots and in the atmosphere; therefore, particular attention should be paid to these points; for if they once get a-head, they are difficult to destroy without injuring the plants. Sulphur will effect it, but it requires a careful hand to use it, that we would, in preference, recommend syringing with clean water, and keeping the plants shaded for a while.

We cannot recommend any particular sort to be grown, as we believe the best is not known. But we have grown the following kinds, and know them to be good:—The *Bromham Hall*, *Terry's Green-fleshed*, *Beech-wood*, *Snow's Green-fleshed*, *Netted* and *Egyptian Green-fleshed*. And of the Persian varieties, we have grown the *Gezee*, *Ispahan*, *Green* and *Striped Hoosainee*, and *Dampsha*. The last is an excellent sort for keeping, as well as good in flavour, though we consider the *Ispahan* the best of this class, and not inferior to any other. But the Persian varieties are better adapted for houses where they can be trained upon a trellis, than the common frame, as we have found some difficulty in getting them to set in frames, and particularly if dull weather occurs at the setting time; while in houses they may be much assisted by fire-heat; and we would give them the preference for this structure, though some assert they are much more difficult to manage; but in a house we never found them so.—J. THOROGOOD.

GREY SHANGHAES.

WE have received many letters relative to these birds, for which we most heartily wish that they may prove as meritorious as some of their possessors wish us to believe. All that we can do at present is to endeavour to tell our readers what we consider proved, and then leave them to judge for themselves. We have done some service in exploding the statement that they lay eggs as large as those of the turkey; and still more in securing the assent of their honest owners to our opinion, that, at most, they are only a sub-variety of the Shanghai. That they prove a very superior sub-variety we shall be as glad to have proved as any one of our readers, but this has not been proved yet. At all events, they are not a distinct variety, and, therefore, not entitled to such a misleading name as *Brahma Poutra*. We wish every one of their partisans would imbibed the spirit of Dr. Cust Gwynne, whose letter we subjoin.

"I return herewith Mr. Woodford's note and feathers, with many thanks for the sight of them, as also for the kind note from yourself which accompanied them. Some fortnight ago, Mr. Woodford, in reply to some questions from myself respecting them, gave me a minute description of these birds, which then, and without seeing any feathers, quite satisfied me that they were not what are called

Brahmas or Grey Shanghaes. His birds are what are denominated by some *Cuckoo* Shanghaes, and are not uncommon; at least, I have seen a good many such. Mr. Higgs, of Southampton, had some very similar last year; and two years ago, I had a young imported cock of, I think, precisely similar plumage, sent me by a gentleman in town, along with an inferior, but *true* Grey Shanghae cock, also imported from China, but which, approving of neither, I returned. Mr. Simpson, of this place, some two years ago, bred some very handsome birds of the same variegated cuckoo and gold plumage, from a large yellow Shanghae cock and a Malay hen, the offspring partaking so little of the Malay as not to be distinguishable in shape from good Shanghaes: some of these were sent to a Mr. Walker, of Gosport. The Brahma Poutra strain of Grey Shanghae have none of this *party-coloured* feathering; they are simply black and white; the black in the best specimens being principally confined to the neck hackles; the tail (which, in the cock, is often beautifully shot-green), and the tips, or pen feathers, of the wings, and the chief beauty of the birds, to my mind, consists in the striking simplicity of contrast between the dark marking on the parts mentioned, and the pure white, or sometimes rich cream-colour, of the rest of the body. Some of the Brahmas which were sent me from America were much darker than would answer to this description; but these, or part of them, were certainly not genuine Shanghae, but I believe the produce of a cross with the original Brahmas, or some of their offspring, and either Malay, Chittagong, or perhaps some other breed. Two or three of the Queen's birds, however, are considerably darker than the rest, although there is, I believe, no question of their genuineness; that is, of their being from the unmixed strain from which it is acknowledged by all U.S. fanciers the best specimens of Greys are derived. I enclose feathers from the neck of the cock and hen of my birds. With regard to what you say of the efforts making to give these birds a fictitious value, I shall be as ready as yourself to protest, as far as my individual opinion and experience go, against enhancing their worth by representing them as a distinct breed, possessing qualities other than those common to the best strains of Shanghae; but, on the other hand, I would not withhold from them that extrinsic or "fancy" value to which, as a new variety of one of our most esteemed breeds of poultry, they are, in all fairness, entitled, particularly if it shall be proved, as I confess I think it will, that they are excelled by no other variety of the same breed either in size, or, in the general estimation of poultry breeders, beauty. If when my own birds have been fairly exhibited, as I trust they will be in the course of our winter shows, they fail to come up to this standard, I shall be content to forfeit what little claim I may be supposed to have as an authority in such matters.—WM. CUST GWYNNE.

This letter from Dr. Gwynne will serve as an answer to some of the statements in the following:—

"It would puzzle 'C. H. B.' to find a 'Grey Shanghae' in this country, equal in beauty, form, colour, &c., to the splendid birds in the possession of Dr. Gwynne, myself, and a few others. Whether they are really entitled to the name of Brahma Poutra, or not, I maintain that the birds called by that name are far superior to the Cochins or Shanghaes, in many points; they certainly do carry more flesh forward, and do not present that flat, nipped-in appearance in the chest, as is so frequently seen in the Cochins or Shanghaes; they have a beautiful, round, and full appearance from the neck to the legs, and are altogether noble and magnificent birds; as layers, and for gentleness, they are not to be surpassed. In short, I believe they are the most to be admired of any variety of fowls that have ever been introduced into this country. The first time they made their appearance before the public, after their arrival in England, was at the Baker-street Show, in January last; there they were scarcely noticed, as Cochins, or Shanghaes, at that time held a position above every other fowl. This was not to be wondered at, as no one had ever tried the new variety called Brahma Poutra, and, therefore, had no practical knowledge of their value; but now that some few amateurs have given their attention to the birds, I think their opinions ought to have more weight than the opinion of those who write against the birds, without ever troubling themselves to test their superiority over other varieties.

"I know it to be a fact, that many write against the Brahmas through prejudice, and first sight; but notwithstanding all this, I am quite certain of these birds taking a high position in the poultry-yards next season.

"The numerous enquiries after them shew that the amateurs are not to be gulled and governed in their choice of fowls by the poultry dealers, who attempt to write down the birds which they know to be difficult to come at, and, consequently, do not offer an opportunity for them to make large profits by them. And as to your correspondent's remarks relative to the cross-bred birds between a 'Game hen and Cochins-China cock producing chickens scarcely to be distinguished from Brahmas,' I do not believe this to be true. I have taken the trouble to try various experiments, by crossing the Brahmas with other birds, and not in one instance did I obtain a bird anything like the real Brahmas. I have crossed and recrossed Cochins with various other birds, but never obtained anything approaching a Brahma. This has strengthened my opinion in favour of the latter being a distinct breed. Then, as to their colour being bad, the person who would make such a statement must have surprising bad taste, for I am sure the colour of their plumage is very beautiful. This is not only my own opinion, but the opinion of a large number of amateurs who have visited my poultry-yard.

"Before a person presumes to write against any variety of fowl, I think that person would do well to enquire closely into the merits and demerits of those he condemns, and then there would not be half the erroneous statements circulated as there has been in the case of the ill-used Brahmas.—A NORFOLK AMATEUR."

The last letter which we shall quote, until next week, upon this subject, is from "C. H. B.," alluded to in the preceding. He says:—

"In explanation of my remark, that the Grey Shanghaes were deficient in many of the beauties noticed in good Buffs, I have to offer you the following:—

"With all the Greys I have seen (no few), I have invariably noticed not only a coarseness generally, but that it was more apparent in the head and comb, and that there was, generally, a forbidding expression about the eyes; quite opposed to the small, neat head, and thin neck and comb, with the gentle, amiable sort of a look the Buff hen has. The Greys are never so short in the leg and thigh, so full in the thigh, nor so well breeched and broad in the rear. The wing, also, is not so short, and closely tucked in, and there is a total absence of what is now considered so necessary with a first-class bird, viz.—the falcon hock, &c., which is so striking an ornament with a few of Mr. Stainton's Buff birds. I admit, the Greys are large, which produced the word *splendid*, in reference to Mr. Stainton's Greys, but they are long in the leg, and, to my eye, not to compare in form with the before-mentioned.

"As better Buffs were already in this country than America had it in her power to send, I can only suppose Her Majesty was presented with the Greys as the greatest novelty she could accept; and seeing that the Windsor Cochins-Chinas, in 1843, lent such a powerful influence towards the future fortune of the breed, and from the subsequent demand from Mr. Burnham, by private individuals, for the same kind of birds, it would not require any very great stretch of perception to notice another very good reason for the present than that mentioned.—C. H. B."

THE COTTAGE GARDENER'S PONY.

(Continued from Vol. x., page 471.)

CAPTAIN G—, Southampton, complains that London job masters, dealers, &c., will not let a gentleman have a little horse under fifty guineas. Just so; and it is as bad as paying six shillings for a little bottle of middling wine, or sevenpence for three glasses of bottled beer.

One of my earlier papers contains a pen-and-ink sketch of the cottage gardener's pony, and I mention the north of England; and Ireland as his habitat. Ballinasloe fair, Brough-hill fair, or, possibly, Ormskirk fair, near Liverpool, are the places where these nags are to be bought. A good judge, on a commission of five per cent., will select just the

thing, on the last day of any country fair, out of the ruck of those passed over by dealers, as deficient in size, fashion, condition, or even colour. Some time back, Louis Philippe bought up, at about £17 a-head, a large number of under-sized horses for his light cavalry. I saw them going off. Twenty little nags, personal friends of mine, mostly above 14½ hands high, have been picked up at prices not far off £20. All having distinguished themselves in their day.

Dealers who buy for the army, country postmasters, and our friend "cabby," buy up rather a taller, stronger, faster style of horse; but their price is not far off my limit. I always ask the price given for a fast horse whose performances please me.

If you have no market nearer than London, and can meet with an honest agent, and know a little about a horse, try this plan:—Pick up a slightly-battered, cheap, London cob, not too far gone, at the end of the season. All the best horses go to London, where they are mostly ruined, and get prematurely old. Country air, slow, constant work, a paddock, a loose box, shoes nailed on one side, plenty of oats, little enough hay, some bran, some carrots, cleanliness, "dry shoes and stockings," my system, will restore our debilitated courser; at least, you cannot lose by him, if judiciously selected at first; he will last till you get something better. One of my friends buys an old poster every spring to plough with his own horse, and sells him in summer.

I have spoken of the cottage gardener's pony as a "MAD of all work," and like the Arabs, I prefer a mare; such will be easier to buy, and better to sell. She is not vicious, naturally; and with a certain amount of liberty, regular work, natural diet, and no stable tricks, will never become so. Homer's chariot race is won by a pair of mares. "Eliadum palmas Epirus equarum," says Virgil. I only speak of my pony as a horse to avoid singularity, and because I do not like to appear to degrade the sex by connecting anything female with drudgery. Thus we say—my cook, my nurse, my servant; not cook-maid, nurse-maid, servant-maid.

A horse is always *he*, in English, as a ship is always *she*. Only think how it would read, to talk of travelling with four post-mares. In Homer, or Virgil, or in Arabic, it might sound better.

My calculation was "forty," not "fifty" guineas, for keeping up a pony-chaise in the country. A sum not often greater than the difference in rent and taxes between a country house and a town house. I am often misprinted, but a consciousness that the printer's mistakes are much more venial than my own, always deters me from correcting verbal errors.—VIEYOR, *Rainbow Castle, in the county of Ayr.*

SEA WEEDS.—No. 10.

(Continued from Vol. x., page 469.)

BEFORE proceeding with the description of the other kinds of Polysiphonia, I feel disposed to turn aside a little, and direct the attention of my readers to the fine coast of Bamborough, in Northumberland, just opposite to the Fern Islands, whose rocks are so fatal to mariners. How the mighty ocean comes rolling-in upon that beautiful beach of white sand! brimful, as if no barrier could stop its progress! but there is One who has said, "Hitherto shalt thou come, and no further." "The voice of the Lord is upon the waters; the voice of the Lord is powerful; the voice of the Lord is full of majesty, and maketh the storm a calm."

Bamborough Castle is seated upon a solitary rock, which seems to have been made for it, towering up above all the other parts of the village, and standing as if on guard between it and the sea. And what a view of the ocean it commands! With the Fern Islands scattered at its feet, or seeming almost so, though at some distance; Holy Island on the left, with the remains of its ancient church, whose "low columns and circular arches, with zig-zag mouldings in the Norman style, resemble those in the earlier parts of the Cathedral of Durham;" and at a short distance from Lindisfarne, is the rock called St. Cuthbert's Isle, where, according to tradition,

"St Cuthbert sits, and toils to frame
The sea-born beads that bear his name."

Once I ascended the rock on which the Castle stands just as the sun had sunk beneath the horizon. How shall I describe the glory of the scene, bathed as it was in radiance; for all around, upon the ocean, the sky, the earth, was shed that rich, soft tint of pink, which is seen upon some shell found in a warmer clime than ours. It was almost too lovely for a mortal's eye.

"If thus Thy glory decks the span
Of ruined earth and fallen man,
How glorious must the mansions be
Where Thy redeem'd shall dwell with Thee."

HEBER.

Unwillingly I descended as the glowing tints gradually faded away. "The manor and castle of Bamborough were purchased by Lord Crewe, Bishop of Durham, who died in 1720, and left the property, as well as other estates, for charitable purposes; for the succour of shipwrecked seamen, the education of children; blocks, tackle, cables, &c., are kept for the use of stranded vessels; apartments are ready for shipwrecked seamen; and, in stormy weather, two men patrol the coast, for eight miles, day and night, to look out for vessels in distress; there is also a library at the castle, at which any one residing within ten miles may have books for life on payment of half-a-crown."

But let me say a few words about the Fern Islands. The great Fern has two lighthouses upon it; and who can read of these islands, and the lighthouses, without remembering the heroic Grace Darling? Who can visit the fine old church, and wander about its burial-ground, without pausing to look at the tomb erected to her memory. There she lies, as one weary with toil, and sleeping sweetly. And far below, the mighty ocean—so many of whose prey are buried in the same churchyard—with its bright, dancing waves looking so joyous and full of life; such a striking contrast to the stillness of the place, where the wicked cease from troubling, and the weary are at rest! When the trumpet sounds they shall all awake! and the sea shall give up her dead—some shall rise to everlasting life, and some to shame and everlasting contempt. Oh, reader! with which shall *you* be found?

These rocky islands are often the cause of shipwrecks in stormy weather. The channel between the mainland and the principal island is by no means safe. It is at one of the islands called the Long-stone, that the lighthouse is situated which Grace Darling has rendered so memorable. On another, called the Staples, are rocks forty feet high, frequented by birds; and on these rocky islands grow many beautiful Algae, and to them I must hasten to return after this long digression.



POLYSIPHONIA URCEOIATA.

SUB-GENUS 2.—POLYSIPHONIA.

"Primary tubes six or more."

15. POLYSIPHONIA BRODIEI.—Named after Mr. Brodie; from six to fourteen inches long, with a robust stem and numerous alternate branches; colour a dark brown-purple; substance gelatinous, soon decomposing in fresh-water,

and smelling very disagreeable; it is pretty generally distributed, and found in summer.

16. *P. VARIEGATA*.—Brownish-purple; rigid, but becoming of a hair-like fineness upwards. "On mud-covered rocks; very local; also on *Zostera*. Hitherto only found in Britain, in the neighbourhood of Plymouth, but there abundant. A distinct and beautiful species, and widely dispersed; abundant on the shores of France and Spain, &c."—*Harvey*.

17. *P. OBSCURA*.—In small tufts, matted together, spreading over rocks in large patches; colour dark red or brown.

18. *P. SIMULANS*.—Found on rocks; rare, and of a red colour. Orkney, Jersey, and Torquay.

19. *P. NIGRESCENS*.—Common on rocks; the fronds are from six to eight inches high; stems rigid; upper branches rather soft and much divided; of a dull brown, and changing to a darker shade when dry.

20. *P. AFFINIS*.—Four to eight inches high, on rocks; found at Cashendall by Mr. Moore.

21. *P. SUBULIFERA*.—"In deep water, very local; four or five inches long; substance tender and flaccid; Torquay. Mrs. Griffiths, Weymouth.

22. *P. ATRO-RUBESCENS*.—Branched; rather rigid, and of a red-brown colour; from two to six inches high; stems thickly tufted, and not adhering well to paper.

23. *P. FURCELLATA*.—Floating in the sea at Sidmouth; Mrs. Griffiths and Miss Cutler; filaments slender, five or six inches long; much entangled and excessively branched; colour, when recent, a bright brick-red. A most distinct and beautiful species."—*Harvey*.

24. *P. FASTIGIATA*.—"Tufted; very much branched, branches dichotomous, fastigiate, the ultimate ones very short; articulations shorter than their diameter, with a dark spot in the centre; capsules sub-terminal, ovate, sessile."—*Greville*.

This very common, but very pretty little plant, is parasitical on more than one kind of Fucus. It makes very pretty specimens for the herbarium, and when not too old adheres well to paper. It grows in such thick, round, bushy tufts, that it can scarcely be mistaken for any other weed.

25. *P. PARASITICA*.—A very beautiful, delicate-looking plant, growing on the larger Algæ. Nowhere very plentiful, but found in many places. I have specimens from Arran. It is from half-an-inch to an inch-and-a-half high; of a rose-red colour when recent, but becoming brown in drying. A lovely little thing.

26. *P. BYSSOIDES*.—"On rocks, and in the sea; abundant on the eastward and southern shores of England; rare in Scotland." The finest specimens I have ever seen are from Miss Heslop, found near Douglas, Isle of Man. The fronds are from four to twelve inches long; stem undivided; the lower branches the longest, gradually diminishing upwards; the lesser divisions more or less densely clothed with slender, single-tubed, once or twice forked, spreading byssoid fibres, or ramuli, which give the frond a beautifully feathery appearance. Colour a fine clear red, which quickly becomes brown on exposure to the air, or in drying."—*Harvey*.

S. B.

(To be continued.)

BEE-KEEPING FOR COTTAGERS.

(Continued from Vol. x. page 509.)

First Swarms.—Swarming generally takes place in the latter end of May, or the beginning of June. About this time, a great number of working bees and drones have been hatched, whilst several young queens are ready to leave their cells. The hive is too small for its numbers—its inside heat is very great; and, to remedy this, the old queen, at the head of a number of her subjects, leaves the hive for some other home, which has already been pitched upon. Before starting for their new home, she, in most cases, settles on some tree or bush near the old hive, in order that the bees may join her; and here she will stay for some minutes, frequently for some hours: then must the bee-master be ready with a clean, dry hive (for washing the inside with sugared beer, or rubbing it with pounded leaves, is worse than useless), into which he must shake or sweep the swarm, according as it may have settled. As there can

be but one way of hiving swarms, it will always be best for beginners to get some experienced neighbour to assist them in this work. Whilst the bees are swarming, let there be no rattling of pots and pans; but let them be watched patiently and quietly. All noise will be more likely to alarm and drive away the bees than make them settle. As soon as they are quietly in the hive, let the hive be set up; that is, placed on the stand that has been prepared for it. Be careful not to fix any sticks inside the hive, as they are greatly in the way in harvesting the honey: the bees will fix the combs firmly enough without artificial aid. There is not much to fear from bees at swarming-time, they being less apt to sting than at any other time. It is difficult to know when a first swarm is about to come off: on all fine calm days, from the first week in May to the end of June, the hives should, therefore, be watched from ten to four o'clock.

Second Swarms or Casts.—About nine or ten days after a first swarm has gone off, a second swarm or cast generally follows. By this time, a great quantity of the brood left in the combs by the old queen has been hatched. The young queens are allowed to leave their cells. Their first feeling is to seek the open air. Their subjects follow them; they alight and cluster, and are hived, as in the case of a first swarm; but, instead of being set up, should (unless it happens to be a very early—say not later than the beginning of June—large cast, when it may be treated as a first swarm) be left near the place where they alight, till night, and then be returned to the old hive, in the manner to be described by-and-by. Two or three young queens often go off with second and third swarms, but all but one will be killed by the next morning.

Third Swarms or Colts sometimes leave the hive at a later time; but these should be returned to the old hive at once, as from smallness of numbers, and lateness of season, they have no chance of doing any good. The time at which second and third swarms will leave the hive may be learnt by listening at the entrance of the hive at night; if a shrill piping sound be then heard (the sound cannot be mistaken, and is only uttered by the young queens at this period) the swarms may certainly be looked for the next day.

Prevention of Swarming.—Swarming may generally be prevented by giving greater space to the bees, as their numbers increase. This space may be given by placing, from time to time, small hives on the top of the stock-hive, when the bees, finding they have enough room for carrying on their labours, waste no time in thinking about swarming. This way of managing is good for many reasons. The bees, where swarming is allowed, often hang idly about the hive for many days, waiting for the queen's departure. These days of idleness are saved by giving more room. The honey, again, that is stored up in small top hives is purer than that in the stock-hive. If the latter be of a proper size, there will be no reason for the queen to rise and lay eggs in the top hive, neither will pollen be stored away there by the bees. The honey stored in top hives also can be taken much more easily than from the old hives, and some part of the store will be ready to take quite early in the season—a great consideration where profit is the chief reason for bee-keeping. Honey, again, in small top hives, is not only more easily carried to market than when cut up and laid upon dishes, or run into pots, but will also fetch a far better price. A strong hive, worked properly on this plan, will yield more profit than it and its swarm would do on the old plan. When more hives are wanted, either to replace old hives or to increase the Apiary (as a Bee-garden is called), then swarming must, of course, be allowed to take place. Should hives swarm in spite of all efforts to prevent it, the swarms must be treated in the manner already explained.

R.

(To be continued.)

TO CORRESPONDENTS.

RHODODENDRONS (*L. E. L.*).—*Queen Victoria*, a bright purple, 5s., is one of the best of that tint; the next best, and bluish purple, is *Catawbiense robustum*, 2s. 6d. *Nivalican* is a good white, and cheap, 2s. 6d.; and *Perspicuum* is much about the same, at the same price; and *Roseum elegans*, 2s. 6d., the one so commonly seen as standards; are all as good as can be had for the money; but newer and much better kinds of all the shades are on sale, from 7s. 6d. to 31s. 6d. each.

GLADIOLUS (*Margaret*).—*Brenchleyensis* and *splendens* are two kinds you may safely add to your list of Gladioli. The London trade has *Ree*

rubrum, and all the others we name; but we know of still finer ones, which are so scarce yet, and so dear in consequence, that we do not even name them. One peck of soft yellow loam, half-a-peck of such peat as they use for Heaths, half-a-peck of very rotten dung, dried and sifted through a coarse sieve, and a quarter-of-a-peck of clean pit or river sand, or the same proportions of other measures, will grow these Gladioluses so fine that you will be sure to win the first prize in Dublin, or all Ireland, with them, if you happen to get good bulbs, and you grow them slowly all the way through.

BULBS (Ibid).—We are quite certain, from your "determination," added to an Irish spirit, you can get into the way of growing *Amaryllides* of all sorts better than nine-tenths of our best English and Scotch gardeners. If you simply keep in mind that gardeners kill their bulbs of all sorts by giving them too much heat before the leaves are full grown, we do not see how you can err with them. Even as it is, we would back you now to grow them better than the gardeners who take the show prizes in London! Your *Deutzia scabra* is all right if it is making suckers; cut away the dead parts, and you might put a little fresh soil over the roots, but no digging near the roots just yet.

SAMBUCUS RACEMOSA.—H. M. says,—"In a notice of one of the meetings at the Horticultural Society, in Regent Street, on the 26th of July this year, you mention the exhibition of a branch of the *Sambucus racemosa*, and speak highly of the beauty of its red berries. Can you, or any of your correspondents, say if, and where, this shrub is to be obtained in England? A few years since, I was greatly struck with the effect of it in a garden at Ems, where, in every clump of shrubs which adorned the garden, one or more of these trees, full of berries, formed a very striking ornament. Returning to Ems, the following year, at the same season, I was, however, sorry to find no berries on the trees, and was informed by the gardener that they did not, as a matter of course, bear fruit every year, which is, no doubt, rather a drawback to their cultivation. In the same garden, I saw splendid specimens of a very old plant, the Marvel of Peru, upwards of four feet high, and a yard nearly in diameter; and on inquiry as to soil, and treatment, to bring them to this size, was informed, it was merely owing to the age of the roots, which, in this case, were eight years old. I saw many smaller plants, which, I was told, were only two or three years old." It is no drawback to this kind of Elder that the fruit does not ripen every season. All our fruit trees, and most of our ornamental fruited shrubs and trees, fail at times. We do not know where the plant is on sale. We have always advised that the fleshy roots of the *Marvel of Peru* should be treated like those of the Dahlia. So treated, we have seen plants much larger than those named by our correspondent, and we have recently heard that the varieties of it will sport much if the different species are crossed in the usual way.

SEEDS FROM RIO DE JANEIRO (M. M. U., Liverpool).—The twelve kinds of seeds gathered by a gentleman who lived several years at Rio, and who calls them good, and he not a botanist, nor even a "plants man," are very likely to be of very ornamental plants. The seeds appear to be in very good condition; but the names are merely the local names in use among the population at Rio, and such are not to be found in books. You had better keep them till the beginning of February, and then sow them, and put the pots into a cucumber bed; we shall sow ours at the same time; keep your names, and if we recognise the plants, you shall hear the names. There is nothing new in the heating apparatus you heard of in Surrey. We happen to know something of the ironmonger; a very respectable man, and like all other respectable tradesmen, he does his work well, and it answers well. For your propagating house, twenty-two feet long, nine feet wide, and eight feet high, four-inch pipes will be required to do the heating well. We do not know enough of Liverpool to say if there is, or where there is, a wood-cutting machine in, or near it.

ERRATUM.—At page 478, for "*Cobaea* and *Pentstemon*, for instance" read, "*Pentstemon Cobaea* for instance," and again, for "few gardeners can manage *Pentstemon* and *Cobaea*," read, a "few gardeners can manage *Pentstemon Cobaea*."

COMBINING SHANGHAES AND DORKINGS (An Amateur).—Where the supply of poultry and eggs to the house is mainly regarded, we believe that Shanghai and Dorking Hens, with the male birds of the latter breed, would be best calculated to produce a continuous supply throughout the year. This subject received full attention in a recent article of THE COTTAGE GARDENER, No. 257, page 415. But any attempts to breed again from such cross-bred birds will not succeed. We regard the "*Rouen*" Duck as the one most likely to be generally kept with profit.—W.

DORS THE NURSE INFLUENCE THE NURSING'S DISPOSITION (A. M.).—Your premises are so uncertain, that we should be unwilling to draw any positive conclusion from them; in the first place, the chickens hatched are "*thought*" to be Shanghaes; and secondly, the hen under which they were hatched, "*is Game, or, at least, three parts Game.*" But even with these imperfect facts before us, we should find no difficulty in expressing our opinion, that the difference in character of the chickens could only proceed from their partial acquisition of their mother's habits and disposition. As to "*inoculation during hatching*," producing this effect, we must at once reject any such notion, for we have nothing on which to base the slightest probability that such could have been the case. The necessity for exactness in statements of this kind is still more apparent, when so many instances may be quoted in opposition to the theory built upon them. Of many hundred Shanghaes, for example, bred by us this year, many clutches were hatched under Game hens, without the slightest variation in their temper and character from those that had been reared under mothers of their own race.—W.

FLOWER-GARDEN PLAN (Omega).—How could you have the folly and impertinence to send us a copy of a plan which appeared in the *Magazine of Botany*, three years ago, vol. i. p. 199? If we knew you, we would tell you privately and briefly what we think of one capable of such contemptible attempts at misleading.

GERANIUMS AND PELARGONIUMS (A. B. C.).—Geraniums will not cross at all with Pelargoniums or Erodiums either. If you turn to Vol. ii. you will see what you ask for at page 243. All letters should be addressed to the Editor at the office in London.

PIGEONS BREAKING THEIR EGGS (G. H.).—We sent your note of inquiry to Mr. Eaton, whose very useful and trustworthy volume, "*A Treatise on Pigeons*," we shall notice next week. He says, in reply—

"I have no doubt the fault is all your own. Although rats and mice cannot get at them, query, are they run over with vermin, and their nest swarming? This will cause birds to forsake their nests within a few days of hatching more than anything else I know of. A careless fancier aids them by not making the pigeons a proper nest, as they seldom make themselves a good one. Nevertheless, old cock birds are seldom fond of sitting than old gentlemen are fond of nursing. I gave £7 for a celebrated old Almond cock; matched it up to a celebrated hen; the eggs always added, determined to observe the birds; when the cock relieved guard to sit, he had not been there long, before he would come and sit on the perch at front of entrance to his pen for an hour, and then go back to his eggs after they were added. It is dangerous to trust old cocks to sit, if they are valuable birds, otherwise it is not of any consequence. The time has arrived to give up all idea of breeding this season, and more next. With regard to the price of *Almond Tumblers*, a pair may be dear at £1, and another pair cheap at £10.—T. M. E."

JERSEY (A. Z.).—We cannot give any opinion on your poor soil in Jersey. In England, it would do for larch, birch, and most of the conifers and common shrubs; also, for sainfoin, and ultimately, barley, oats, potatoes; and, last of all, turnips.

APPLE TREES (A Constant Reader).—These are planted shallow, with the place of union of the graft and stock above the ground. Never mind. By no means raise the trees, and plant them deeper; but you may please your "blue aproner," and do neither good nor harm, by raising a small mound or cone of earth around the grafted part, provided that the base of this cone does not exceed six or eight inches in diameter.

PEACH-TREE GUMMING (Ibid).—This, and some branches dying, make us suspect the wood was too vigorous last season to be ripened. Re-planting may do good.

CUPHEA, FUCHSIA, AND VERBENA CUTTINGS (Cymro).—Keep them in cutting-pots, or pot singly now, just according to your conveniences. If you can nearly fill a pot with roots before November, pot now. If there is little chance of that, refrain, and pot in the spring. If you have only three in a pot now they will stand well.—*Lignum vita*, and other evergreen shrubs, you may move as soon as you like, and the sooner the better. To kill woodlice, place a little dry hay in their haunt; turn it up on a morning, and wield a can of boiling water over them. Place pieces of turnip, carrot, or potato in small pots, or bell glasses, and a little dry hay or moss over them. Examine in the morning, and empty all the captives into boiling water. For anything very particular, draw a cord line of tar round it, and that is a Danube they dare not cross.

MANY QUESTIONS (A Young Gardener).—It would take a whole number of THE COTTAGE GARDENER to answer your many and mixed queries. How many trees of keeping Apples do you require? How to keep apples was recently detailed in our pages. Buy *The Cottage Gardeners' Dictionary* and *Loudon's Encyclopaedia of Gardening*. No work is published on *Orchid* culture; but there was a very full and excellent series of papers upon the subject, by Mr. Appleby, in our fifth and sixth volumes.

POULTRY QUERIES (T. P. M.).—We fear that the distention of the throat in breathing indicates diseased lungs. Pink legs, if entirely pink, are objectionable in *Shanghaes*. They should be yellow; but pink where the scales are thin is not amiss. *Pullets* will lay in due course, without a male companion, as soon, or nearly so, as they would if mated. *Feeding* twice a day, with the unrestricted run of a large meadow, will be enough for your fowls in the mild climate of Guernsey. The colder a locality, the more food is required. *Buckwheat* is good food, but we like Barley, Indian Corn Meal, and Wheat better. There is no mode of *preserving eggs*, for sitting purposes, beyond three weeks, with a certainty of success.

FOWLS DUNG (Incubator).—The fresher it is applied the more powerful are its effects. We should spread it on the surface, and point it in over the roots of the Roses, but not until the spring.

GETTING UP A POULTRY SHOW (H. W.).—There is no magical mode. Form a committee; draw up a schedule of prizes and rules; let the prizes be liberal; fix two days for the Show; advertise in your local papers, and in THE COTTAGE GARDENER; and have an active Secretary; and then the pen money and the entrance fees will pay the expenses. If you take care to have the birds returned immediately the Show is over, you will meet with still better success the next year.

LAURELS DISEASED (Hy. B.).—The holes in the leaves seem caused by gangrene, and we should think the trees are old and the soil exhausted. Try the effect of a good dressing of manure.

SALE OF SHANGHAES (Bootham).—Consult Mr. Stevens, King-street, Covent Garden.

WEAKNESS IN SHANGHAES' LEGS (A Subscriber, Guernsey).—We fear, from such symptoms, as well as "the long feathers of the wings growing raised and partly spread out, instead of close and compact," that there is organic disease. We should give citrate of iron, as recommended by Mr. Tegetmeier the other day, and, in addition, add cod-liver oil.

DANE-WORT (B. C.).—This is the *Sambucus ebulus* or Dwarf Elder. The green leaves of this, and of the common Elder also, are said to drive away mice and moles if put into their haunts.

HOLLYHOCKS (Goddess).—These may be propagated from buds. Slips from the bottom of the old roots may now be planted. In our 16th number, page 173, you will find the whole mode of propagating by buds.

ELDER WINE (A Constant Reader).—Four three gallons of cold water over one peck of berries; let them stand for twenty-four hours; then boil the whole for twenty minutes, adding 1 oz. bruised ginger, 2 oz. of cloves, and 4 oz. cinnamon, tied in a muslin bag; strain off the liquor, and add 3 lbs. of moist sugar to the gallon, and boil again with the same spice for quarter-of-an-hour; when cold, put it into a cask, and if required for long keeping add half pint of brandy. *Brown Beurre Pears* are preserved as all others are.

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WEEKLY CALENDAR.

M D	D W	OCTOBER 13—19, 1853.	WEATHER NEAR LONDON IN 1852.							Clock af. Sun.	Day of Year.	
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.			Moon's Age.
13	Th	Scarce Umber; trees.	30.360—30.303	54—41	E.	—	23 a. 6	10 a. 5	1 38	11	13 44	286
14	F	Mottled Umber; trees.	30.291—30.251	49—46	N.E.	—	24	8	2 55	12	13 58	287
15	S	Mallow Moth; mallows.	30.258—30.135	54—44	E.	—	26	6	4 10	13	14 11	288
16	SUN	21 SUNDAY AFTER TRINITY.	30.234—30.212	52—29	E.	—	28	4	5 23	14	14 24	289
17	M		30.195—30.124	54—36	N.E.	—	29	1	rises.	☺	14 36	290
18	Tu	St. LUKE.	30.345—30.175	56—31	N.E.	—	31	1v	5 a 53	16	14 48	291
19	W	Virginian Creeper leaves fall.	30.451—30.305	55—30	N.	—	33	57	6 12	17	14 59	292

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 58.8° and 42.2° respectively. The greatest heat, 76°, occurred on the 14th in 1845; and the lowest cold, 24°, on the 18th in 1843. During the period 103 days were fine, and on 79 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 1.)

TURRITIS.—TOWER MUSTARD.

GENERIC CHARACTER.—*Calyx* erect; leaves oblong, converging, deciduous; two opposite ones very slightly protuberant at the base. *Petals* reversed-oblong-egg-shaped, undivided, erect, not twice the length of the calyx. *Filaments* thread-shaped, simple, erect, unconnected. *Anthurs* oblong, incumbent. *Germen* line-like, the length of the petals. *Style* very short. *Stigma* blunt, simple. *Pod* line-like, compressed, very long and slender, crowned with the permanent stigma; valves straight, flat, each with a prominent keel, and quite as long as the linear membranous partition. *Seeds* very numerous, disposed in a double row in each cell, crowded, obliquely pendulous, egg-shaped, compressed, slightly bordered; cotyledons flat, accumbent.

TURRITIS GLABRA: Smooth Tower Mustard; Towerwort.



Description.—It is an annual. *Root* carrot-shaped. *Stem* two or three feet high, cylindrical, erect, wand-like, simple, smooth, except at the bottom, leafy. *Radical-leaves* numerous, spreading, toothed, or sinuated, so as to be almost lyre-shaped, rough on both sides with rigid, forked, or simple, hairs; *stem-leaves* numerous, alternate, upright, oblong-

arrow-shaped, entire, milky-green, quite smooth, clasping the stem, but not perfoliate as some writers have denominated them. *Flowers* numerous, closely clustered. *Petals* pale sulphur-coloured. *Pods* very long and slender, smooth and even, erect, close to the stem, on short stalks, cylindrical when full grown. *Seeds* reddish-brown, about sixty in each cell, very small.

Places where found.—Not common in England, and rare in Scotland. On the dry gravelly soil of road-side banks.

Time of flowering.—May to June.

History.—Until Mr. Brown pointed to the double row of seeds in *Turritis*, botanists had been at a loss for a generic distinction between it and *Arabis*. It is not difficult to explain why it should have been called a *Mustard*, for the pungency of its flavour entitles it to be so distinguished, but why the term *Turritis*, or Tower, should be applied to it is less apparent. It may have been that Clusius, who bestowed the name, discovered the original species on the old ruins of some tower; or it may be, that its pyramidal form of growth suggested the name. Ruellius says—"that the juice of the herb healeth ulcers of the mouth, and that the poor peasant (on the continent) doth use the oil (of the seeds) in banquets, and the rich in their lamps." (Smith. *Withering*. *Martyn*. *Gerarde*.)

BARBAREA PRÆCOX.—EARLY WINTER CRESS.



This was accidentally omitted at page 1 of our last number.

RESUMING our notes relative to the Cholera, we will observe, that the Registrar-General's returns do not establish any direct connexion between cholera and indifferent *Water*; at least, unless the latter be notoriously bad, offensive to the sight, the smell, and the taste, it can hardly be set down as a direct cause of this disease. Here, with all due respect, we may take our leave, for the present, of microscopic and chemical analysis—a standard of four and-a-half degrees of hardness, and prospectuses of new water-works. 'The purer the water is, the better; but to have it perfectly pure, is hardly to be looked for in this corrupted old world of ours; neither is it essential to health and long life. The human (like the English) constitution is a very intolerant one though gross; palpable, wanton aggression, it is certain to resist. To those who make themselves miserable because they can get no water in their neighbourhood of very great purity, we would say—a common, cheap filter, and a quire of blotting-paper, are not very difficult things to obtain

Anything likely to be swallowed in the beverages we drink is far less dangerous than damp, and exhalations from filthy, stagnant water, as these afford the means of diffusing pestilent miasms, unaccompanied with the unlimited power of washing or driving them quite away.

We are right in attributing restorative influences to the sea, and to running streams; they appear to give off, fresh and fresh, continuous supplies of balmy, health-renewing particles; and it is found that these particles consist of loosely-combined oxygen, or of oxygen and its allies, chlorine, bromine, &c., in somewhat larger proportion than in common air.

Where a sluggish river all but comes to a stand still in a vast swampy plain, the moist air still acts upon and changes every thing within its reach; but here we have no rapid current to remove the results of the changes thus effected, and to supply perfectly fresh particles every instant. The stream itself grows muddy, and the air is no longer eminently pure and invigorating, but depressing and damp.

The well-dammed banks of a great commercial river admit but a small portion (comparatively speaking) of sea-water twice a-day, whilst into it unmeasured quantities of corrupt animal and vegetable remains are hourly poured, all to be oxidized, chloridized, or purified and reduced, a thing physically impossible, for when the salt in the tide "hath lost its savour," the river begins to approach the sanitary condition of the hold of a water-logged ship (and putrid holds and overcrowded berths foster cholera and yellow fever, even out at sea).

No wonder that one-half of the cholera in all England occurred at eight great sea-ports, and had its chief seat, in each case, within the influences of the polluted tidal atmosphere.

During its recent progress in Asia, this pest posted from place to place on relays of vapours stationed by swampy rivers and low maritime places. Generally this is the case, the exceptions only proving the rule; as

when a fog rising from a marsh settles itself again on high ground.

After our heavy floods, last year, fevers of all kinds spread rapidly along the reeking surface of the earth. A bottleful of ink thrown into a running brook will only stain its course a very little way for a few moments; but one drop of ink will diffuse itself at once through a decanter full of water, staining the whole. Thus it may be, that stagnant moisture spreads *infection*, as the word itself implies.

Caution is required in the free use of water for carrying off all offending matters from about our premises. An immense quantity of liquid sullage thus produced may become a great nuisance, unless extraordinary care is taken to have it carried rapidly away, far from human abodes; a thing impossible in many places near the level of the sea. This impossibility is in no ways diminished by washing into sewers, not only fluids but solid refuse, suspended in water, with street and court sweepings, and valuable manuring matters capable of being carted off.

Unswept gutters, foul ditches, and pools of water; marshes, undrained fields, with a heavy top-dressing of manure; irrigated meadows; are much worse things than unsightly manure-heaps, which last should be roofed over with a few boards, or have a few shovelfuls of earth thrown over them, and they should be removed frequently, and with care.

Surface-drains, as of farm buildings, or of outhouses and yards, are easily repaired, and with the pavement and flags should be put into order. I confess to a pristine faith in the venerable institution of the cow-rake, besom, and wheelbarrow, for lustration, night and morning. After one diligent scraping and sweeping up, some absorbent substance, as sawdust, chaff, straw, charred clay, sand, or ashes, may be scattered over the surface, and the besom applied a second time, or gypsum, lime, chloride of lime, or dried salt may be used, or there is peat mull, and peat charcoal. These dry hints are good, not only against cholera, but also against the small pox, scarlatina, and even the pleuropneumony, or disease amongst cattle. J. J.

(To be continued.)

In the formation of a Poultry Society, the first steps to be taken by the promoters should be with reference to the probable amount of subscriptions and other funds, according to which their prize-list must be constructed. It is manifestly unwise to select certain members of the Poultry Yard, and honour these by the offer of premiums, while others equally distinct, and generally regarded as equally meritorious, are either passed by unnoticed, or jumbled together in some strange medley. Far better, indeed, to give smaller prizes, and let all have their chance for them, than to create dissatisfaction by the partial arrangement against which our remembrance on more than one occasion has been directed.

One main object of these institutions being to afford

the public the fairest opportunity of ascertaining the relative economical value, as well as the other points of excellence of the various breeds, the exclusion or confusion of any of these is evidently at variance with this design. Thus Dorkings, both coloured and white, should stand apart; White Shanghaes should have admission; the Golden and Silver Polish should not be brought into collision; nor the white, black, yellow-spangled varieties of this race banished; although, from their present rarity, a class for "other varieties" might as yet suffice. That the highest prizes throughout the whole list should be offered to "*Barn-door Fowls*," we should regard as a serious mistake, for reasons that have often been adverted to; and, again, that the chickens of all, from Shanghaes to Bantams, are to compete together, presents a fatal obstacle to the value of any inference to be drawn from awards resulting from such classification. These last remarks have been suggested by our perusal of the prize list, for "Poultry and Pigeons" to be awarded at the meeting of the *Newton Abbot Agricultural Society*, on the 8th and 9th of November next.

If we are not mistaken, this will be their first exhibition; our opinion, therefore, which rests on the general observations drawn from the management and success of many similar Associations, may possibly be thought worthy of consideration by those who have interested themselves in this and other Societies, on whose arrangements our comments have taken the same line, before their schemes for another year may be determined on.

It is our task to chronicle the progress of poultry-keeping in all its details; and since Exhibitions of this kind affix the stamp of comparative success or failure on the efforts of those who compete on these occasions, every single step by which arbitration may be influenced calls for our special notice. Let it not be thought that in such cases where we find ourselves at variance with the regulations authoritatively put forth, that any discouragement is designed, for nothing, in truth, can be further from our intention, which is directed to the general interest of the poultry-keeping public, and especially to the ultimate well-doing of the individual bodies to whose system we find ourselves unable to give unqualified assent.

This leads us to another suggestion, which would refer to the districts in which the formation of Poultry Exhibitions are desirable. Not for the first time do we now pronounce a very decided opinion that "*Counties*" would prove the wisest limitation; some of the larger, it is true, might require division, such as already exists for electoral purposes, and Yorkshire should, doubtless, have one for each of its Ridings, but we gravely question the policy of multiplying them to the extent that is now taking place. Surely *Newton Abbot* and *Torquay* might be satisfied with a common field for competition, for they are barely six miles apart, with, moreover, railway communication. Now, the evils of such antagonism, for it usually amounts to this, are manifest; a spirit of opposition, more or less, invariably arises—the poultry

of the district are not brought together to one and the same place—a reduced prize-list fails to collect, from other parts of England, the better specimens that would serve as models for a higher standard; and last, not least, dissatisfaction and discontent is apt to arise from birds successful at these minor shows failing to stand at the head of their classes when brought into more general competition. We are far from having attained any such point of excellence as may warrant us in resting on our oars in respect of any of our breeds of poultry; and the managers of every exhibition will do well to consider, as an object of primary importance, the means by which the best specimens from all parts of England may be placed before the inhabitants of their several districts.

What has been so often complained of in the smaller Agricultural Societies is equally true here; the radius of fifteen or twenty miles too generally includes the owners of all the stock brought together: A's boar, bull, cows, or sheep, as the case may be, adds another local laurel to its wreath; and B. constantly goes home under the conviction that A's animal comprizes all the points of excellence which he need trouble himself about; and further improvement seems altogether a work of supererogation. We are speaking, be it remembered, of those minor meetings to which nearly every market-town now seems to be so attached. Parity of reasoning will extend to Poultry Societies, crowded unnecessarily one on another, a precisely similar list of evils.

On the 16th and 17th of November, the *Winchester and Southern Counties Society for the improvement of Domestic Poultry* hold their meeting, at Winchester. This Association has the advantage of a wide area for their exhibitors; and the experience of last year has enabled them to put forth a very liberal list of premiums. Some of their rules, it may be observed, are likely to prove most efficacious in preventing discussions which have at times proved difficult of arrangement on such occasions. Rule XI., for instance, assigns to the discretion of the honorary secretaries the admission of "cottagers" as exhibitors. Now, wherever a certain sum has been mentioned for rental, beyond which the condition of a cottager has not been recognized, the extreme difficulty of discriminating between the various circumstances of life that would entitle the occupier to this privilege has been a fruitful source of depression and inconvenience, which the power here given to the secretaries, arbitrary as it may perhaps appear at first sight, is well calculated to allay.

An alteration in the rule enforcing sale has been made, and, on many accounts, we think the change beneficial for all concerned.

In Rule XXI., the insertion of the exception of the Game Fowl's comb, where the penalties for trimming are alluded to, would have rendered the passage more explicit; and though, doubtless, the framers of this regulation never contemplated exclusion on that account, still exhibitors are often prone to mistakes, and the specification of the exception might, therefore, have been advisable. With the exception of a wish that another year may produce such increased prosperity on

the part of this Society as may lead to the enlargement of the Geese and Turkey classes, both of which should include old and young birds separately, the task of criticism is now complete.

Mr. Fox's young Shanghaes and Spanish Fowls at this sale, on the 5th instant, by Mr. Stafford, at the Baker-street Bazaar, were not of that high character generally that we expected from our previous knowledge of his stock birds. There were 124 lots of Shanghaes, and 36 of Spanish; but only 79 lots of the former were sold, and 32 lots of the Spanish.

The best Shanghae cock (Lot 17) was bought in. One of his sons (Lot 11) sold for £5 5s. A buff pullet (Lot 12), commended at Yarmouth and Bury St. Edmund's, £4 15s. A buff hen (Stainton's breed—Lot 20), £5 10s. Buff hen (Lot 31), bred by Mr. Andrews, £5 10s. Silver cinnamon hen, sister to Mrs. George's "Annie" (Lot 34), £6 15s. Black hen, first prize at Bury St. Edmund's (Lot 39), £6.

Of the Spanish (Lot 125), a prize cock, £4; (Lot 126), prize hen, £3 15s; (Lot 130), prize cock, £5 5s.

Altogether, the 79 lots of Shanghaes fetched about £122; and the 32 lots of Spanish about £38.

PEACHES AND NECTARINES OUT-OF-DOORS.

If we may judge by the complaints so frequently recurring about failures in these fruits, we may at once infer that their culture is very imperfectly understood or much neglected. That much ill-success attends their culture, not only north but south, is sufficiently attested by the fact, that the question of the necessity for providing glazed structures and heated walls is a growing question.

Now, it really does seem to me extraordinary to find men eminent in other branches of their profession, yet incapable of carrying out good Peach-culture. When first I set foot in the gardens here, I was gravely told by the steward, that "it was little use trying to grow Peaches, for they never lasted above three or four years; they decayed prematurely, and nobody could tell why." This seemed to me very odd; but I by no means placed implicit reliance in the inference, although an opinion not held by the steward alone, but by most of those who had known the gardens for a long period. I found most of the walls hollow within, full of fines, which had not received fire heat for some years—probably given up in despair. These fines exist to this day, and form admirable runs for the rats; ferrets have no chance up their almost interminable avenues.

On destroying or removing some of these trees, I found that borders of six or eight feet had been formed for them, and immense quantities of slate, marl, and manure lie buried beneath them; soil, in fact, too gross for Cabbages or Celery. On borders thus constituted, I found, indeed, that the old steward was nearly right; the trees used to canker and blotch, and die at the points, as though they were poisoned. Those which had attained a little age were crowned at some of the extremities with a tuft of leaves and some poor fruit, whilst the main stems were bare as walking-sticks. Up to this period, my ideas of Peach-culture were much like those of everybody else, excepting that I had long been possessed with the notion that there was something radically wrong in the culture of most of our fruits,

especially those from hotter climates. About this period, appeared some very searching and substantial papers in "Loudon's Magazine," drawing pointed attention to the subject, and showing forth glaring errors. Amongst these, a Mr. Robert Hivers stood pre-eminent; he broke through all trammels, and went immediately to the root of the question. Who this man of sound and fresh views was I never could learn; but I remember regretting much that he never took pen in hand again. However, this paper led to a fresh train of ideas; it broke the manacles which had so long bound us to deep and rich borders, to close spurring, and other matters, which, instead of assisting nature, attempt to thwart her; and, I have no doubt, that scores besides myself, if they will be candid, will confess that they took their cue from that bold and simple paper. Henceforward, with me, a deep and rich border was an abomination; and although, in my first attempts to apply opposite principles, I very naturally went to an extreme, in a few cases, yet these served further still to illustrate the principles on which fruit-bearing habits depended, as opposed in some degree to grossness and luxuriance.

It was found, however, in the Peach and Nectarine, that in order to command a sound and enduring tree, it was necessary to have a certain depth of sound loamy soil, from eighteen to about twenty-four inches; but there immediately arose the question of what relation should this bear to the ground level? Although previously a neglected subject, I was persuaded that much importance attached to this point. It appeared plain to me, that a degree of drought, or, rather, a somewhat dry and mellow condition of root was necessary at certain periods during the summer; but that even if this should not prove tenable ground, an immunity from stagnation must at least be secured, and that this, in certain localities, could scarcely be effected by placing the volume of prepared compost on a common level with the adjacent soil.

In following out such practices, I soon found that a much more moderate amount of soil would suffice than our old wholesale border-maker had been accustomed to; and that, by consequence, the production of Peaches and Nectarines had been long rendered a much more costly affair than was by any means convenient; and not only costly, but precarious. This led to the idea of preparing "STATIONS" for them; that is to say, a definite and given plot of ground, which they could call their own; and which, from their definiteness and duly apportioned extent as to the need of the tree, would at all times throw open the surrounding portion of the border for any cultural operations necessary; and not only this, but as a guide and limit to the operations of the root-pruner, should his services become requisite.

Here then, as far as I could discover, lay every requisite for successful root-culture, with the exception of surface-dressing, which may be considered an extraneous affair. And surely, when our friends consider this question fairly, they will very naturally conclude, that if such common crops as Cabbages and Cauli-flowers require some degree of root-culture, it is not fair to deny it to a Peach or a Nectarine. As for the mode in which such arrangements act on the well-being of the tree, it would take too much space to tell the tale; as by a very long article in the *Horticultural Society's Journal*, by Monsieur Alexis Lepere, which article has occupied many pages in two or three Nos. This French method, to me, appears overwrought in every respect: not one gardener in a hundred, take England through, can fathom out such tedious processes in connection with the demand on labour which at present exists; and, indeed, neither is there occasion for such niceties. The article alluded to, however, handles, in the most elaborate way, the modes of pruning, stopping, thinning, &c.; including, of course, all branch-manage-

ment; and I should not have alluded to it here, but for the purpose of pointing to the much greater simplicity of my course of practice. I shall, however, refer to the matter in a future paper, and recapitulate, for the benefit of fresh readers, the chief maxims in leaf and branch-management.

I may now, perhaps, be permitted to state the condition of the Peaches and Nectarines here treated for many years as above described; and if I must praise them, I hope it will not be considered egotistic, as my object is to recommend, *more strongly still*, the course of culture pursued for several years past. I find, by my book, that I have already gathered about 917 Peaches and Nectarines of good quality, from a length of wall, 150 feet long by 9 feet high; and there are some 200 or 300 remaining. The crop, indeed, has been so excellent as to leave nothing to desire. But I cannot remember the time when we had a bad crop; and during the last four or five years they have been so very plentiful that it is scarcely worth while to point to any one season. The trees, in general, are now about twenty years old, and they are clothed, and bear to the very collar, not one brick on the wall they cover being wholly visible. Another point; the shoots, on all portions of the trees, are so equal, that gardeners are sometimes puzzled to find neither luxuriant nor weak shoots. Those who have not seen them, would be apt to fancy the picture overcharged, but it is not so; and I merely depicture their character, to show that the clamour that exists about the *necessity* for hot walls and glazed structures is most extravagant.

That Peaches and Nectarines may be grown *earlier* in glazed structures, or artificial heat, is undeniable; that the blossoms *may* be easier secured, I admit; but to infer from this that they cannot be generally depended on from the open wall, I as stoutly deny; indeed, the full crops here for years at once gives it the denial. But somehow, in chatting with persons who have had great failures, and I have talked with many during the last year or two, they nearly all insist that this is a peculiarly damp or cold locality; how is this when they are from the four points of the compass? One complains loudly that his garden is so high that every wind reaches him; another, that his locality is so low that the air is always damp! By this it would appear that those only who live half-way down any given incline are in a fortunate position. Surely this kind of evidence would not fit in a court of justice.

The fact that we, in this quarter, had 22 degrees of frost on the night of the 26th or 27th of March, when our Peaches were nearly in full bloom, under canvass covering, and that a crop set and swelled as thick as I ever knew, surely is strong evidence that something may be done out-of-doors; and as for favoured localities, why ours neither is, nor can be, of so peculiarly a coaxing character. As far north as Manchester, and as near to the Irish Channel that our window sills have before now had a saline deposit on them from the sea; these are surely not indicative of a Devon or Cornish climate!

But it is useless to tamper with a question which, after all, lies in a narrower compass than many will admit. After all, the difference in localities, whatever stress is sought to be laid on this point, is not, by any means, so great as has been represented: that is to say, admitting that for the locality in question, the cultivator is prepared with such appliances as canvass covering, &c., Nevertheless, I should like to know whether canvass can be expected to ensure a crop of fruit on a tree with badly-ripened wood; or, if you will, crippled flower-buds? What would a great market-gardener in the suburban districts of the great Metropolis say to an investment, in the shape of half-a-dozen acres of Onions, from seed which he had seen growing in a country far north, and half-ripened in September? Would he expect to pay

rents and taxes from such prospects? I fancy not. Now, although by close consideration, something more highly illustrative might be found, yet this, to really experienced men, will throw light on the affair; or, indeed, the same may be said of any crop which naturally ripens late, and, under awkward circumstances, imperfectly. And what may be expected of Peach or Nectarine trees, which are rambling away, and producing breast-wood in October? This will always be the case with deep and overpowerful soil.

Now, there is a vast difference between a tree growing in nearly a yard in depth of rich soil, *without top-dressing*, and one in eighteen inches deep of a free loam, *with annual top-dressing*; whatever the results may be, the most uninformed will readily perceive that the two cases differ widely, and that different results must, of necessity, take place. And what results? Why, in the first case, the tree with deep roots can never receive the slightest check from drought; if the solar rays are any benefit to soils, its roots are not in a position equal to the second case to receive benefits from them. In the second case, the whole volume of roots are, of course, more within the solar influence in a higher degree; and, moreover, it will be found, that by an annual surface-dressing of roots, a complete layer of new fibres, or net-work, is formed annually; and this network is much more susceptible than the ordinary roots of either, as to extra sustenance, in the hour of need, in the shape of liquid-manure, or a temporary check, when requisite, through drought. Here lies the gist of the whole affair; and, strange to say, though I have talked to scores of persons, in this way, for the last half-dozen years, I am not assured that half-a-dozen of them fully understood or appreciated—what I must consider—the importance of the matter; they generally go away with a sort of half recognition of these principles: few differ from them, and as few get fairly warmed with the subject.

Now objections cannot be on the score of trouble. Had I space, I could soon show that my practice causes *much less trouble*; not that I would judge every assumed improvement in horticulture on the score of trouble *alone*; although what is termed extra trouble generally means extra labour, and this assuredly is not the chief requisite in modern improvements; such are scarcely recognised in these days unless marked by a high degree of simplification, and, by consequence, economy.

Let it *not*, however, be understood that I repudiate the propriety of erecting glazed structures for a higher degree of cultivation in our superior fruits. I am quite aware that some persons may conclude that such is the case; but it is not so. I verily believe that much may be done this way in these days of cheap glass, bricks, &c. But I do hold it a duty incumbent on those who pretend to assist in furnishing ideas to a public—too busy in the main to attend to the minutiae of practical professionals—to nicely distinguish such matters, and so to separate the parts of any given question, as, in the language of our bluff sailors, to “let every tub stand on its own bottom.” So, that whilst I attempt to prove that Peaches and Nectarines may be grown with certainty on our open walls, in at least three-parts of this kingdom, I also think, that all those who can afford it will do well to possess themselves of an orchard-house, covered walls, or, it may be, such structures as Ewing’s glass walls; although about the latter I have no experience; they require a little farther trial before a safe judgment can be pronounced. The trial now going on in the Horticultural Gardens, and some other places, will tend speedily to decide the question.

I intend, during the rest season, to look into the question of glazed structures, and the character and needs of those fruits which are likely to become candi-

dates for them, together with bearing on other portions of a garden establishment, for it is a question not to be settled in the abstract alone. So many demands exist for an increase of glass in most gardens, that whoever builds structures for fruits will speedily find other candidates at his elbow seeking admission, although only as temporary residents.

R. ERRINGTON.

PILLAR ROSES.

EVER since I described the extraordinary specimens of Pillar Roses at Bank Grove, near Kingston, and learned myself, from the living facts before me, how Pillar Roses ought to be begun, carried on, and finished in perfection, I felt both the necessity of spreading a knowledge of the whole process among amateurs, and that I should be called on to do so when the time of planting and pruning came round; so that I have been repeating or rehearsing to myself, for the last two or three months, the substance of this communication, but without anticipating the rise of the curtain so early in the season; and if I am too early, the first glance from behind the curtain must be my only apology and excuse, and that glance revealed a stag's head with "branching horns," and this motto all round, *Labor omnia vincit*, which, in the instance before us, means that diligence will overcome all difficulties about Pillar Roses and other things. Under this motto are three initial letters, and the person they represent begins by saying, "I have a Pillar Rose, *Blairii*, No. 2. It is eight feet high. Last year it was covered with bloom. This year it bloomed only at the top. This Rose is now (Sept. 28) almost leafless; the long branches are thin and scraggy; there is not a leaf as high as I can reach, but at the top it is green enough. It had no summer-pruning, nor any manure that I know of since it was planted. Can you tell me what is the matter with it, and what I ought to do with it?" There is no question at all as to what is the matter with it, neither is there much difficulty about a decision as to what ought to be done with it. Whether the late Sir John Broughton, or his gardener, was the first person who thought of growing Pillar Roses, or whether the Roses formed by them into pillars are the oldest Pillar Roses in the world, or not, I cannot make out, but I am almost sure there are now more Pillar Roses at Bank Grove, in the highest degree of perfection, than can be found in any other garden of equal extent in any part of the globe.

Now, when we take into consideration that no treatise, nor even the most commonplace directions, were in print for many years after these Roses were being formed into pillars, it is not to be wondered at to find one or two (only so many) failures in the then unexampled experiment, and the most conspicuous of the two failures is No. 2, *Blairii*, a magnificent tree, rather than a pillar, full sixteen feet high; but now the first ten feet from the bottom are rather scanty of wood.

I recollect, as if it were but yesterday, going over to the Clapton Nursery, to see Mr. Low, on the evening of the passing of the Catholic Relief Bill in the House of Lords, and there met Mr. Blair, who was then gardener in that neighbourhood, and who told us of his success in raising a much better Rose than the one called after him. This is our *Blairii*, No. 2, and I should suppose that Sir John Broughton would have planted it either in the autumn of 1831, or in the spring of 1832. From these dates, it is open to any one to correct my statements, if I am wrong about the want of a guide for making Pillar Roses before the passing of the Reform Bill.

There must be something peculiar in the habit of *Blairii* No. 2, when it so far deceived the gardeners at

Bank Grove as to become leggy, after they managed to get up the common *Moss Rose* to eleven feet high on its own roots, and clothed to the very grass with abundance of flowering shoots in the utmost health, and that, too, in a garden with the natural soil as poor and sandy as any in this kingdom. When a really good Rose "comes out," more especially in those days, they could not afford to make cuttings of it; every bud must tell for a plant; and so it was that this plant was worked on the Dog Rose, and that alone accounts for the nakedness complained of. This Rose is naturally more vigorous than the Dog Rose; but, for the first seven years after planting, the stock and the head progressed more on an equality than they have done since. The roots of the Dog Rose, by this time, reached the outside of the bed, and stuck into a moist, sandy bottom, and the head drew more, or would have drawn more, sap, if it could, than roots in such unfavourable circumstances could gather and send up. The head soon told the tale about the poor soil below; the gardener took the hint, root-pruned, and enlarged the bed for a fresh start; by this time the equality or equilibrium between the roots and the head was gone, and, like all trained trees,—whether they be Rose-trees, or Pear-trees, or any other trees,—the topmost shoots came the strongest, and the more strong they, the weaker those at the bottom became, till at last there is hardly such a thing as a healthy shoot as high as one can reach. The Peach-tree, trained against a wall, is the next best exemplification of this condition of things.

When we want a fine specimen of a Portugal Laurel, or Laurustinus, or of a pyramidal fruit-tree, as a Pear or Apple, we must begin, and always continue, to allow the bottom tier of branches to be the longest, and every successive tier above that must be a little shorter than the one below it; as long as this goes on, it matters not if the top is so high that a swallow could not fly over it, it will never get top-heavy, and the top shoots can never starve the bottom ones by over suction. It is not exactly on this very plan that Pillar Roses are brought up in perfection, but the principle is just the same: the strongest part of the Pillar Rose, or of the specimen plant or tree, must always be the bottom part. Roses, in general, and particularly those of them that are naturally best fitted for being made into pillars, have that kind of habit which is easiest to manage and mould into the form of a pillar than into any other form whatever, that is, their habit of throwing up strong suckers from the collar of the plant, so that we should always have more wood at the bottom than we needed, instead of bare wood, were it not that such Roses are budded and made to grow on other roots than their own, thus depriving them, in a great measure, of their natural propensity of throwing up suckers. According to our present mode, the suckers must come from the Dog Rose collar, and these we must battle against; instead of their coming in so handy as they would do, were they natural suckers to that particular Pillar Rose, we are compelled to witness the nakedness at the bottom become more naked, year after year, and still are obliged to rub off suckers as fast as they rise; surely, then, we are not yet on the best road to easy success with *Blairii*, No. 2, and many more such Roses. Let us, therefore, turn to a new leaf, and from this season never plant another Rose which is intended for a pillar, except it be on its own roots, and not budded on any other stock whatever. Ten feet is a good height for most of the strong Pillar Roses; and when we have the proof of the practice before our eyes, in that several varieties of the *Moss Rose* are higher than ten feet on their own roots, and also that Moss Roses require the very best soil, we need not doubt for one moment that all and every one of the *Hybrid Chinas* and *Hybrid perpetuals*, above the medium-sized kinds, as *Duchess of Sutherland*, will do for

Pillar Roses much easier, and in a worse soil, than any of the Mosses, if they are on their own roots.

It is more from prejudice, and for the mere convenience of the dealers in Roses, that Roses are budded at all; at any rate, it is not from any good budding can possibly be to the Rose itself, unless, perhaps, to the very weakest; and what is more strange than all, the weakest Roses, and those of most tender constitutions, as some Chinas, and Tea Roses, are left to shift on their own roots entirely. If I was young again, and with my present experience, I would make up my mind never again to plant any Rose whatever, *except standard Roses*, but on its own roots. I would then get rid of all the bother and disappointment caused by unsuitable stocks, and want, or supposed want, of Rose soils. All our best Pillar Roses ought certainly to be propagated from cuttings and layers, instead of from buds, but they never will, in a regular way of business, until the public have sufficient time to prove that many Roses can hardly be made into decent pillars, after the first few years, and that, under all circumstances, it is far more difficult to manage a worked Rose pillar, than one on its own root.

This settled, let us now suppose a case in which a gentleman has bought or built a new house, the garden, and all the rest of the land being also new to planting, and that he read of the splendid Pillar Roses at Bank Grove, in THE COTTAGE GARDENER; if he has any taste at all for gardening, and if he has not, let us hope he is not married, he would surely wish to have one Pillar Rose, if only one, but having heard that *Blairii* No. 2, one of the finest for pillars, is so apt to get bare below, and turn shabby, after a few years, he would wish for it, but still fears the trouble, and much more the disappointment, and makes up his mind for *Coupe d'Hebe*, or *Madame Laffay*, or some such easy-to-manage kind. Here THE COTTAGE GARDENER steps in, and thinks, if he can make it out, as plain as can be, that *Blairii* No. 2 can be so managed, that nothing but sheer inattention to the simplest rule can cause any one to fail with it, all other Pillar Roses may be taken in hand with a certainty. It is more than likely, that any of the large growers can supply plants of this Rose from cuttings, as it comes from cuttings in the spring as easily as a Verbena, that is, if the old plant is forced, and cuttings made of the young shoots; at all events, we must have a good, healthy, young plant of it, on its own roots, to begin the pillar, and good fresh loam, with a spadeful or two of solid rotten dung to plant it in, and then we must prune it on the close system, down to three or four eyes, and water it occasionally through the first summer.

It is at the next pruning, this time next year, that one is apt to make the first mistake with it. I am persuaded that Pillar Roses ought certainly to be pruned for the first six or seven years, by the end of October, unless the season is very mild indeed, such as we had this time last year. In that case, the end of November, or any time before the new year, would be early enough for the pruning. We shall take it for granted, that our young Pillar Rose made three shoots the first season, one of them being stronger than the other two put together, and considering that the form is to be that of a pillar, nothing seems more natural than that the strongest shoot should be cut down to one-half its length—say to three feet, as a foundation to the pillar, and that the other two were cut to within a few inches of the bottom, to make sure of a succession of wood, and that plan would do very well with a great number of Roses, but not with *Blairii*, and a few others that are equally strong; so sure as you are alive, if that Rose was cut so at that age, or at any time during the first ten years, so sure the attempt to make a fine balanced pillar of it would fail, the strong shoot would keep the

load, and get stronger and stronger every year, and the young idea might be thinking, all the time, that nothing could be more promising, but by-and-by, the bottom begins to get bare of shoots and leaves, and the tale ends like that of our correspondent's.

There is not an amateur out of a score who could explain the first mistake of cutting the strongest shoot to three feet only, which was the sole and entire cause of the present failure. An experienced Rose grower can see it at once. If this Rose gets away in the head while the plant is young, it is not disposed to make suckers in after years, therefore it must be a very great mistake to allow it, while it is young, to make one shoot stronger than another; but the first year that could not be helped; at the second pruning, instead of leaving the strongest shoot three feet long, it ought to have been cut down to six inches, and the two weaker ones, instead of being cut into a few buds, ought to have been left at half their length; just the very opposite of what we supposed would be the case, and that which is done in nine cases out of ten. Trees and bushes, however, which are trained for particular purposes, and into particular forms, must be managed and set off at first rather by particular modes of pruning than by any fanciful training; and here is an example—the weaker shoots of this Rose are left longer than the stronger one, in order to get three, four, or five shoots direct from the bottom, and each of them of as near the same strength as possible.

Thus, in one small sentence, we have the whole art and mystery of keeping Pillar Roses in health and beauty for an indefinite period explained; get a certain number of shoots from the very bottom, not less than three, and it is only bad management, or very bad soil and late spring frosts, that can ever do them much harm afterwards. But, with the best management, and under favourable circumstances, some of these strong Roses have already failed under the more ordinary practice of the gardener, therefore it is not now necessary to repeat the experiment to prove the fact. Very many of the best Pillar Roses throw up such a quantity of suckers, if they are grown on their own roots, that the difficulty is to know how to dispose of them for the first few years; yet, to such as do not thoroughly understand the rules for pruning different Roses, I would advise the plan of not allowing any Rose intended for a pillar to grow up with one strong stem in the middle, but always with five shoots, if possible, of the same strength; and after that, whenever a shoot much stronger than the rest appears, instead of encouraging it on, and making use of it as a centre, it ought to be stopped before it gets more than a foot or eighteen inches long. I would insist on this rule, particularly after reaching the height of seven feet. It is just as treacherous to allow *robbers* above that height in a Pillar Rose, as it would be at the top of a full-spreading Peach; and we all recollect the earnestness with which Mr. Errington bids us to be careful of them whenever or wheresoever they may appear in fruit trees.

To sum up in a few words—Use strong, young plants on their own roots for Pillar Roses; prune them the first two years, so as to encourage a few healthy and equally strong shoots from the very bottom; continue at least three shoots of equal length for a centre, the other shoots to be cut to different lengths, to keep up a succession of young wood, and form the outline of the pillar; never allow one shoot to get much stronger than the average strength of the principals or centre shoots; never attempt to get up a Pillar Rose with only one shoot for a centre, until you have mastered the mysteries of the art of pruning; and never lose sight of the fact, that all the pruning in the world will not save a few Roses from ultimate failure, if they are first brought up with only one strong shoot in the centre, and *Blairii* No. 2 is one of them. *Hybrid Chinas*, and all other summer Roses, ought to have the principal pruning for

the year when the flowering is over; and all the winter pruning they need, is to thin out shoots where they are too crowded, to cut out very weak ones altogether, and to cut off the points of the rest so as to keep the symmetry of the pillar. Summer-pruning is the grand secret; winter-pruning the bane of this class. But for *Hybrid Perpetuals*, it is in the winter-pruning alone that we must look for beauty and success in the following season.

And now, as to how to deal with the bare Pillar Rose, *Blairii* No. 2. There are only two ways to deal effectually with such an extreme case. I have seen palliatives enough tried and fail with such instances. It is of no use to beat about the bush in such cases; the first of the two remedies is the most effective, but goes hardest against the grain—it is to cut down the whole pillar to within one foot of the ground, to renew the bed, and to water frequently with strong manure-water for the next half-dozen years, when this very pillar would be ten feet high, and in the highest possible health, providing the roots are good. The second plan is, to bend down the pillar very carefully, as low as possible, next February; to keep it down in that position, tied to stakes, for a season, and perhaps two seasons, until suckers were forced from the bottom, then to cover the naked parts with them, and ultimately, the old rose to be only a mere centre piece to the renewed pillar.

D. BEATON.

CROWEA SALIGNA.

THIS genus is commemorative of a British Botanist. There are several species or varieties, such as *elliptica* (oval-leaved), *stricta* (upright-growing), *latifolia* (broad-leaved), and *saligna* (Willow-leaved); but the mode of growth, and the form of the leaves, are the chief distinguishing characteristics, as the pretty flowers are mostly pink and purple, the one shading into the other considerably, according to the degree of shade and bright sunshine to which the plants are subjected. Judging from the prevailing tastes, we cannot be wrong in taking *Crocea saligna* as a good type of the genus, and the treatment that it requires as applicable to most, if not all, of the others. It is a near door neighbour of the *Boronicus* and *Eriostemons*.

It is seldom to be met with in a first-rate condition, unless on the exhibition tables of some great Societies. This, I think, is owing to two causes; the first is, that the purchaser, seeing the plant when in bloom, and receiving no particular attention then, is apt to imagine that it requires none; and the second is, that so much has been said of the hardness of New Holland plants, and the amount of cold they will bear in their native localities uninjured, that we are too apt to indulge them with a New Holland winter, leaving them to shift as they best can for the natural summers of these latitudes; a course of management, which, if it keeps the *Crocea* in existence, will assuredly prevent it exhibiting first-rate marks of excellence. The great thing with such plants is to combine, in one summer, a growing, a blooming, and a maturing period, and then the winter may be looked upon purely as a period of resting, just keeping the plant almost the same as the autumn left it, with but little growth. But all this cannot be done, year after year, if the plant is always confined to the treatment generally given to the denizens of a cool greenhouse. If kept cool, and with plenty of air in spring, it will rarely bloom until late in summer and autumn, and unless the latter season is very bright and warm, and the plant enjoys it all, the wood will not be sufficiently matured to produce flowering shoots next season. Keeping in view that the bloom, as in the case of the Vine, is produced on the current year's shoots, proceeding from the well-ripened shoots of the previous

autumn, a key-note is furnished as to the mode of its successful treatment; and to a few points in that mode I will shortly refer.

1. *Propagation*.—There is little difficulty in this, provided nice young shoots, from two to three inches in length, be obtained from April to June, just taken off with a heel, that is, slipped off close to the older shoot whence they proceed, or so old as to be getting firmish at the bud, against the base of which you make a horizontal clear cut. Insert these in sand, over sandy peat, in pots three-parts filled with drainage; fix them firmly by watering, and when the tops are dry, place a bell-glass firmly over them, and place them so that they may have a bottom-heat of 70°, and a top temperature ranging from 55° to 65°. Pot off as soon as struck; keep close until growth is freely proceeding, and then give air gradually at first, and then plentifully. I have alluded so often to the rationale involved in this—shading, &c., that it would be no compliment to the readers of this work now to repeat them at length.

2. *Choosing Plants in a Nursery*.—Much that was said about the *Eriostemon* will be perfectly applicable here. A nice young plant, furnished to the base with young shoots, or capable of being so furnished, by stopping and pruning those already there, combined with freedom from crampedness of the roots for pot-room, are essential conditions for forming a nice specimen.

3. *Training*.—From the first this must be kept steadily in view. All modes have their peculiar advantages. For this, I would decidedly prefer the conical, as when once the plant is formed, and supported with one neat stake in the centre, little more than an annual pruning, and a little annual arranging, and hasping of the young shoots will be necessary. The lower shoots must, for this mode, therefore, be early hooked down, or hasped down in a nearly horizontal position, by connecting them with a thread to another string or wire fastened round the rim of the pot.

4. *Potting*.—Unless great care is taken in the watering, this plant is impatient of large shifts. When the plant is small, half-an-inch from the ball to the side of the pot will be sufficient. As the plants get larger, one inch will be ample, unless the operator studies and practises what has already been said on the one-shift system. Be the plant young or old, as it will be both economical and of advantage to the plant to keep it cool (*resting*) in winter, the roots should be fastening round the sides of the pot before the dark days come, and, therefore, with plants several years of age it will not be advisable to repot after the middle of July. Young ones intended to be grown and not bloomed may be potted later.

5. *Soil*.—This should consist chiefly of fibry peat, kept open with a fourth part of broken pots, sand-stone, charcoal, and silver sand. As the plants get large a little fibry sandy loam may be added. Drainage must be duly attended to, and the new soil pressed firm round the ball, and left slightly higher than the old to make up for sinking. This not only secures the old soil being thoroughly watered, but prevents the new soil from being unduly soaked before there are roots in it to suck up the moisture.

6. *Position, Temperature, General Management*.—I will take, as the basis in this division of my remarks, a nice young plant that it is desirable to grow on, or a plant that has bloomed early, and that is desired to flower well again. I may just remark, that when the blooming and growing has been going on contemporaneously, there will be the less occasion to encourage the principle of growth slowly, and, therefore, the plants, in summer, may be kept more airy than I here advise. In general cases, however, the following treatment will answer. In June and July, and part of August, keep

the plants in a close, moist atmosphere, at one end of a greenhouse; or, what is better still, in a cold pit, where, by watering the floor, syringing over head night and morning, and keeping rather close, a moist atmosphere may be obtained without more shading than can be done without, and a temperature of from 55° to 65° at night, and from 75° to 85° during the day. In the middle of very hot days a slight shading will be necessary. The moist atmosphere, and the syringing, will help to keep its greatest enemy, the red spider, at a distance. From the middle of August, on to the middle of October, more air should be given; the syringe be discontinued by degrees; the sashes left off night and morning at first, and altogether during the day in fine weather, in September; everything being done to harden the wood, and to effect this, giving no more water *even* at the root than is necessary. By the middle of October, the plants should have an open airy place in the greenhouse; and during the winter, an average temperature of from 40° to 45° at night will answer. When it is desired to bloom a plant early in summer, the points of the shoots should be nipped in the middle of September, and this will swell the buds at their base. By the end of March, these shoots should be well pruned back, if the plants shortly afterwards can obtain a moist atmosphere, and a temperature of from 55° to 60° at night, and a proportionate rise of from 10° to 15° during the day, from sunshine. Sprinkling the plant over head should also be frequently resorted to, to cause the buds to break freely. Weak shoots should then be thinned out, and a suitable number of those somewhat equal in strength selected. When these are from three to six inches in length, more air gradually should be given them; and when they show bloom, they should be moved to a drier atmosphere in the greenhouse. Even when there, however, they like a closer place, and freer from cold draughts, than would suit many other hard-wooded plants. A distance from the ventilator, a coolish temperature, a moistish atmosphere, such as that obtained by placing damp moss in the vicinity of the pot, and an almost unshaded exposure to light, are the circumstances for continuing the bloom, and having it bright. In watering, pure soft water will in general be best; but weak manure-waterings may be given once or twice a week from the time the young shoots, after pruning back, are from three to six inches in length, until the blooming is nearly over. During flowering, the syringing should be changed in an evening into what was explained under the term *dusting*, and that will keep the red spider at a safe distance. If not it must be steamed, with fumes from a hot-water plate, or syringed with the sulphur in water; the latter, however, at the risk of spoiling the look of the plant for some time.

I have not grown this beautiful plant for some time, but years ago, I found these minutiae necessary to success, and that the neglect of any of them was followed by a corresponding disappointment. I have tried resting the plant a little after blooming, and then pruning it in the beginning of autumn, keeping it at one time in a cool greenhouse, and in another in a medium house temperature during the winter; but in neither case did the plant do so well as when grown in summer, ripened in autumn, rested in a cool temperature in winter, and pruned and then started with extra heat in spring.

R. FISH.

STOVE FERNS.

In giving a list of Stove Ferns, I shall confine myself to such as can be readily procured, easily cultivated, and are of considerable beauty—three points of great importance to cultivators generally. The task is rather a heavy one, because there have been lately great altera-

tions made in the names of Ferns, by Mr. Smith, the talented and learned sub-curator of the Royal Gardens at Kew. As, however, these names have now the sanction of Sir William Hooker, I think they ought to be followed by every grower of these charming plants. I shall arrange them alphabetically, as being more easy of reference, adding occasional hints of such peculiar cultivation as each species may require.

ACROSTICHUM AUREUM.—A tree Fern of considerable size, growing from eight to ten feet high, consequently requiring a large stove to grow it in. The leaves bearing seed are erect, with pinnate, or leaflet side leaves. Two or three of the lower side leaves are often barren. The barren leaves, or fronds, are six feet long, bending downwards, with thin, light green, side leaflets, or pinnae. The leaves stand upon the top of an erect stem. To grow it well, pot it in turfy loam and sand, kept very moist, and give a heat in summer of 80°. It is a noble species.

ADIANTUM.—The Adiantums are a large family of the most ornamental and best known, perhaps, of any genus of Ferns. We shall find them growing in the stove, the greenhouse, and the open air, though they will all bear the stove, and flourish well in it, providing the more hardy ones have a short season of rest. They may generally be known by their black stems and delicate foliage, though some of the species of *Pteris* have similar stems.

ADIANTUM BRASILIENSIS (Brazilian).—A beautiful Fern, growing a foot or more high. The fronds are twice pinnated, that is, the main stem sends out side leaves, and these again send out lesser side-leaves, hence they are termed bipinnate, (*bis* twice, and *pinna* winged). The stems are slightly hairy. Require the stove heat, and soil of an open texture. It is evergreen.

A. CAUDATUM (Tailed).—A very neat Indian Fern, with a long process at the end of the leaf, which forms a kind of bulb, and roots readily when it touches the soil. It is a pinnated Fern, each frond growing a foot or more long. Is very ornamental when grown in a small ornamental basket.

A. CRISTATUM (Crested).—A native of Jamaica. Bipinnate; each frond growing nearly a foot long, and hanging downward, rendering it suitable for basket culture.

A. CURVATUM (Curved-leaved).—From Brazil. The fronds are pedate, that is, have the appearance of a bird's foot, each pinnated leaf spreading out in that form from a common centre. A very elegant, well-known Fern, growing sometimes two feet high; requires plenty of pot-room, and a free open compost to grow in. It is evergreen.

A. CUNEATUM (Wedge-shaped).—Native of Brazil. May be readily known by its wedge-shaped leaves. Very beautiful and plentiful, and easily increased by division. This Fern is much used in Covent Garden for bouquets, to mix with and set off, by its lively green leaves and delicate black-polished stems, the bright-coloured flowers.

A. CONCINNUM (Neat).—From the West Indies. This affords an example of a twice-pinnated leaf. They bend gracefully downwards, and grow, when well cultivated, two feet long. I have grown this Fern in a pot ten inches in diameter, in light compost, two feet through, and nearly three feet high. It is very elegant, and easily increased by division.

A. FOVIANUM (Mr. Foy's).—Native of the West Indies. Sometimes called *A. intermedium*. It may be known by the fertile or seed-bearing fronds growing erect, and the barren ones drooping or bending downwards. When young, the leaves have a reddish-brown appearance. The leaves are bipinnate, growing, with good culture, two feet high. The stems are hairy. It is known in gardens as *A. Rhomboidum*.

A. FORMOSUM (The Handsome).—From New Holland. Though this very handsome Fern will exist in a greenhouse, yet it grows so much finer in a moderately-heated stove, that I have introduced it here as a stove Fern. It has the very peculiar form of being four times pinnated. It is a splendid Fern. I have had it three feet high, and several of the fronds two feet across. The stems are black, and rather woolly at the base or root-stem.

A. LUNULATUM (Crescent-leaved).—An East Indian deciduous Fern; that is, it dies down to the root in winter. The fertile fronds grow upright, and the barren ones droop downwards, rooting at the end in the same way as *A. caudatum*. From these end-rooting leaves it may be propagated. Each rooted end should be cut off, potted, and kept in a close heat till fresh leaves are formed, it will then be a separate good plant. The leaves are crescent-shaped, and thinly placed on the leaf-stem. It is a truly elegant Fern, suitable for basket-culture, on account of its pendulous habit. Very apt to perish whilst in a dormant state in winter, if kept too wet or too dry.

A. MACROPHYLLUM (Broad-leaved).—This Jamaica Fern is the broadest leaved of all the *Adiantums*, and, when well-grown, truly handsome. It requires, however, the warmest part of the stove to bring it to perfection. It is of an erect habit, and the young leaves are of a reddish colour. The fronds are pinnate, and grow from a foot to a foot-and-a-half. An open, light compost suits it best.

A. PENTADACTYLON (Five-fingered).—A Brazil species, allied to *A. curvatum*, of which it is, probably, only a variety. It is a handsome Fern, lately introduced from the continental nurseries. Messrs. A. Henderson and Co. had it from Mr. Van Houtte, of the Ghent nursery. I had fronds of it eighteen inches high, and a foot in diameter. The difference between it and *curvatum* appears to consist in the more regular length of each pinnated leaf, and their disposition into five leaves in the pedate form. It requires a warm stove.

A. RENIFORME (Kidney-shape-leaved).—An elegant, dwarf, evergreen Fern, from Madeira, with simple leaves growing on stems from three to six inches long. It will exist in a good greenhouse, but I have always found it difficult to keep alive and in health there. The leaves are uncommonly beautiful, of a bright, shining green. The seed-vessels are placed close to the edge of the reniform leaves, and nearly touch each other. Every collection ought to have a specimen of this charming little Fern.

A. SETULOSUM (Bristly).—A New Zealand Fern. It is the *A. affine* of Willdenow. Frond bipinnate or twice-winged. It may be known at once by the black, bristle-like hairs of the upper surface of the leaves. A free-growing species, easily increased by division.

T. APPEBY.

(To be continued.)

CULTIVATION OF WHEAT ON HEAVY CLAY LAND.

(Continued from Vol. X., page 502.)

HAVING concluded my first paper with a description of the mode of making the long fallow to the point of ridging-up the land in readiness for the seed, I would observe, that the ridging should be completed a fortnight or three weeks before the time of sowing, which should take place about the 20th of October, if the weather is favourable. Should it be otherwise, a week or two later, in ordinary seasons, would be preferable to sowing at an

earlier period, for when the land is in good condition, and the Wheat put in during the early part of October, if a mild winter succeeds the plant is sure to get too gay and forward (commonly called winter proud). In this case (particularly if a cold, backward spring follows), it will receive a severe check, from the effect of which, upon this land, it seldom recovers, but becomes yellow and sickly in appearance, and stunted in its growth, producing a small ear, and at the harvest yielding a moderate, if not a very small, quantity of grain.

The quantity of seed required will be from six to eight pecks per acre, although I am aware that a much less quantity is advocated by some parties; yet it must be remembered, that cold clay land, seeded at the time above-mentioned, requires more seed than warm soils sown under other circumstances. The best mode of seeding this kind of land is by the drill, at nine inches space between the rows, in order that hoeing the crop may be effected with facility. It is the more necessary that the seed should be drilled at wide intervals, for, in some seasons, unless the crop is hoed, it must be very deficient, as the Gold-weed, Black Bent, and other weeds peculiar to most clay soils, are sure to compete strongly with the Wheat plant, and, in certain seasons, will gain the ascendancy over it, unless hoed at the proper time, and under favourable circumstances.

After having described the long fallow process, often rendered necessary on account of the foul and ill-conditioned state of the land, I will now refer to the method of management required to prepare the land for Wheat out of Clover lea, which is the fourth crop named in the rotation before alluded to, as the improved rotation, and advocated by myself as best suited to heavy clay soils.

When this land is sown to Wheat, out of Clover lea, it is all-important that it should be early filled; I, therefore, recommend, that the portion of lea ground which is usually fed by sheep, after the removal of the Hay crop, should be selected for the earliest preparation, and afterwards, in succession, other portions which may have borne a second crop of Hay or Clover seed. It being customary to apply yard or town manure, let it be carted on the land about the first week in August, or as soon after as the usual harvest operations will permit; do not allow it to remain long in heap at this time of the year, but spread and plough in as quickly as possible, to prevent loss by evaporation. The land should be ploughed a good depth, not less than four or five inches, using the skim coulter, which will bury the manure, and turn the sward well under the furrow. Let the wheel presser follow, which will consolidate the land, and effectually prevent any turf appearing upon the surface, after working with harrows.

The above-named operations of carting manure, ploughing, &c., should be continued as fast as the land can be cleared or got ready, for it must be borne in mind, when Wheat is sown upon this strong land immediately after ploughing, that the crop will be liable to become root-false in the following summer, on account of the shrinking and contraction of the land; the young

plant will also be more likely to suffer from the slug after late ploughing. It should, therefore, be taken as a rule, that the earlier this land is ploughed out of the lea, the more certain the crop. If the land is in a kind, workable state, the sooner it is harrowed after ploughing the better, for it effectually keeps down any turf or weeds between the furrows, and gives time for the surface to become stale and mellow for the reception of the seed. The only thing to be feared in this case, is the settling of the land too hard after a heavy rain; it may, however, be scarified or dragged, which will give sufficient mould, and enable the drill to bury the seed.

This land is often sown broadcast after the presser; but I prefer drilling, because I think the Wheat upon this soil should always be hoed if the weeds get up, for although the crop is not usually infested with weeds, in the same degree, when sown out of lea, as it is when sown after a fallow, yet, in most seasons, the weeds peculiar to the soil are sure to make their appearance to some extent. The best time for sowing lea ground is the same as before-named, from the 20th to the 25th of October. Rather more seed should be sown upon lea ground than upon fallow; eight or nine pecks will, however, prove an ample quantity.

After drilling, whether upon lea or fallow ground, let the ground receive harrowing sufficient to bury the seed; a single turn with the harrows will often prove enough upon fallowed land.

It should also be remembered, as a matter of the greatest importance, that a sufficiency of water furrows must be drawn across the ridges, taking care to run them with the fall of the land. It is, however, sometimes very difficult upon heavy, flat, table-lands, to obtain a good outfall; it is, therefore, in such case, desirable that the spade should deepen the furrows at the outlet.

It also a good plan, and often necessary after heavy rains, to examine the water-furrows, and deepen and regulate the course where water has collected.

JOSEPH BLUNDELL.

(To be continued.)

ORCHARDS IN KENT.—No 2.

FILBERTS.

In following up the remarks I promised you on Kentish Orchards, I now come to the duty of describing particular kinds, as the treatment that is given to each differs widely from each other; but before doing so, a few more words, in a general way, will help to make my meaning more clear.

In the first place, I may mention, that it is invariably found that the best fruit-growing districts are those naturally dry hill-sides with which the county of Kent abounds; for though Black Currants and Raspberries like a moister soil, and, when planted alone, which the last-named usually is, a cool moist bottomed soil is generally preferred, still, the majority of fruits prefer a light dry soil. Now, as this is always better where nature performs her own drainage than where art has to accomplish that object, it is needless to say, that the best specimens of Orchards are those where draining has never been required. It would be difficult for a non-

professional writer to describe the chemical properties of such a soil; suffice it, however, to say, that it is neither a sandy, nor a gravelly one, in the sense these terms are used elsewhere, for the soil contains less sand than some which are regarded "stiff," while the term "gravelly" is usually understood to mean such soils as abound in small rounded stones of more or less hardness, from the size of peas and beans upwards; now, the greatest proportion of Kentish Orchards are on soils differing from this last; for though they abound in stones, these are more generally in fragments, as if recently broken, angular, and pointed, and generally of a long shape, but of all sizes. These are found in such abundance, in some places, as materially to impede the working of the soil; while in the latter part of summer, when the ground has lain some time unmoved, the stones may often be shovelled off the top, as from a newly-made road. However, all orchard ground is not like this; but, usually, stone is found either in the soil, or immediately underneath it; and when the latter, it is not always of one kind, for lime-stone, or Kentish Rag, and "Hassock," or that description of soft stone which receives other names in other places, is also found in addition to Kentish Rag, while very good orchard ground exists over the sandstone strata, and some equal to any is found at the base of hills formed of the above materials; and as these often contain the deepest staple of soil, they are the most productive of any of the smaller fruits and other crops, while the larger trees grow there very luxuriantly also, but are, perhaps, not so long-lived.

Although from the above it will appear that a stony soil is preferable for fruit-growing, yet it is not absolutely necessary; as I have seen some Orchards in which the narrow-toothed rake of the flower-gardener might go over a considerable breadth of ground without raking-up a shovelful of stones; in fact, some of it seems all that your correspondents on floral matters could desire for dressed grounds; but the generality is stony, and, as I have said, much of it being on sides of hills, and other uneven places, it follows that water cannot long remain on ground so porous; and though springs are not uncommon, they do not exist in such numbers as to dampen the soil to an undue extent, and are, on the whole, useful, rather than otherwise.

With regard to the aspect which the different inclinations present, there is much less difference than might be expected; and what difference there is, in the opinion of the country people, is diametrically opposed to that of the generality of cultivators elsewhere; for, while we find a fruit grower of our northern counties insisting that his grounds should slope to the south, or south-east, with adequate shelter at the opposite sides, the Kentish Orchard is often facing the north and west, without any protection whatever from these quarters, and the result is often better from thence than from more sunny aspects; but, as I will make this the subject of an especial notice, I will pass it over now, and simply observe, that the extents of Orchards are such, that the choice of ground is less important in districts, where, perhaps, one-tenth, or more, of the whole space consists of fruit, or hop-gardens, or both united—for their culture, or rather the soil, &c., adapted to each is somewhat similar—that I need say no more than that Orchards, in more or less vigour, are to be found in all positions; that mere aspect is really of less consequence than any other circumstance.

Having said enough on that subject, I will turn to other matters; and, beginning with the management of fruits individually, will commence with one, which, being of much importance in Kent, has generally bestowed upon it an amount of care and attention to which it is a stranger elsewhere—I mean the *Filbert*, which is extensively cultivated here; and, in a profitable point of view, is looked upon with much concern

by the caterer for the London market, and is, therefore, treated with corresponding respect by the grower, whose method of operation differs widely from the commonplace rule of letting-the-tree-grow-as-it-will, that is found to prevail where but a few plants are grown, and as success has established the system, we may be assured that any system diametrically opposite must be bad.

This fruit, though not necessarily grown alone, is yet often found so, and, undoubtedly, is better where not encumbered by high trees overtopping it. If planted alone, it is usually allowed a space of twelve feet square, which is not too much, although ten is at times made to do; the plants are usually put in what is called the square plant and not quincunx, and, at planting time, Gooseberries or Currants are usually put in between, to occupy, for a few years, the vacant ground; these latter, forming three for one of the Filberts, but are cut away and removed as the permanent trees advance; they, however, act the part of profitable nurses, and their pruning, &c., is the same as when they form a plantation by themselves. Hops are sometimes introduced for the same purpose, but these are not available to any other class but the hop-grower, who, most likely, has a quantity elsewhere, but small fruits are legitimate everywhere.

In planting, plants are selected which show indications of forming nice spreading heads, at less than a foot from the ground; and neglected plants, that have assumed an upright tree-like habit, seldom make good specimens, for, though they grow away apace after being cut down, yet it is only in gross, useless wood, whence the object of the Filbert-grower to have his shoots of uniform strength, and all grossness is curbed as much as possible; this is done at pruning time, by shortening such shoots as show an undue robustness, with a small hand-saw instead of the knife, and the ragged face left by that instrument, with, probably, a few splinters, &c., will certainly retard a similar growth from taking place there another season, while weakly shoots are shortened with the sharp knife in the usual way. I confess being not a little surprised to find this well-known axiom carried out into such extreme practice as has been done here; but where anything is extensively grown, it is only reasonable to look for the improved modes of culture; but many of our gardening friends would do well to copy the knife-and-saw-practice of the Kentish Filbert-pruner, for I am convinced that the unequal growth we often see in some trees might be much regulated by a judicious use of these two implements in their proper places; for observe, it is not in the early stages of Filbert culture that these are used, but at all times they are called into requisition; and I know of no fruit-tree in which pruning is carried to such a pitch as in the Filbert, unless it be the Vine, and that certainly does not exceed it, for at the first commencement the centre of the plant is cut out, and branches are trained out vertically, so as in some respects to resemble the ribs of an umbrella inverted.

This shape is continued, from year to year, until the trees occupy the full space allotted them, and grow into each other; even then, the centre of the plant is open, and the branches by no means thick, for the young shoots which rise in the centre and other parts of the tree are all carefully removed, only those of moderate growth being shortened, spur fashion, that each season the trees present a naked appearance after pruning time, so much so, that I verily believe, that if all the young wood left on an adult tree was united it would not amount to a yard in length. Uniformity in appearance is also aimed at, and accomplished, too, so that by the time the plantation has arrived at its full growth, the trees present a uniform height of about five feet at their tips, and the centre, as I have said, open so that the sun may shine into the middle of it. In pruning, many of the more robust shoots from the old wood are pulled

out by hand; these are often four and five feet long, and a coarse kind of market basket is sometimes made of them, but they are inferior to willow. The trees, as will be seen, give rise to a great deal of employment, for besides the pruning, which is done in winter, they are also subjected to a process of uncovering at the collar, whereby the roots, for about a yard all round, are laid bare in autumn, in order to check, or rather frustrate, the production of suckers, which it certainly does, and I am not aware of the process injuring the tree in any way. The earth is returned again in spring, and manure is often added, for the Filbert delights in, and deserves, a liberal allowance of good food, and few fruits are more remunerative; and where this one forms a portion of a mixed plantation, it generally yields more than might appear its share of the revenue for such place; but at the same time it must be confessed, that its cultivation, with the heavy and expensive prunings, make it rather a hazardous crop, and when not successful, the losses attending it are heavy. A return of less than £40 per acre will not pay, while it has been sometimes known to yield four times that sum. There are several kinds in cultivation, but the *Thin-shelled Red Filbert* is the most esteemed, while the *Spanish* or *Cob Nut* have their favourites as well; but for private use the latter are the most showy, while the former are, doubtless, the sweeter nut, but they are so well known as to require no further comment here.

H. B.

MALVERN POULTRY SHOW.

THIS was excellently managed, and does not require the excuse of being "the first," to extenuate any mistakes. Another year we hope the funds will justify second prizes in all the classes, and that Gold and Silver Hamburgs will be separated. No judge, with satisfaction to any party, can compare the two. The same observation applies to Bantams. The birds were excellently attended to, and every bird that had to travel by rail was away from the show ground within three hours after the exhibition closed. The show proved profitable, which, as our reporter justly observes, is something unusual for a first attempt.

T. J. Cottle, Esq., Pulteney Villa, Cheltenham, and Mr. J. Baily, Mount-street, Grosvenor Square, London, were the judges.

Class 1.—DORKING. Chickens of 1853.

23. First prize, Mr. William Beach, Hanley Castle. 7. Second prize, Mr. Joseph Smith, Henley-in-Arden.

Class 2.—DORKING. More than one year old.

28. First prize, Mr. John Dain, Henley-in-Arden. 27. Second prize, Mr. Rawson, Walton-on-Thames.

Class 3.—SPANISH. Chickens of 1853.

45. Prize, Mrs. Stow, Bredon.

Class 4.—SPANISH. More than one year old.

48. Prize, Mr. Nelson, The Lozells, Birmingham.

Class 5.—COCHIN-CHINA. Cinnamon and Buff. Chickens of 1853.

101. Prize, Mr. Edward Farmer, Sparkbrook. 64. Highly commended, Mr. Amphlett, Walsall. (The best fowls in the Class, but disqualified for taking the prize on account of colour.)

Class 6.—COCHIN-CHINA. Cinnamon or Buff, more than one year old.

107. Prize, Mrs. Stow, Bredon.

Class 7.—COCHIN-CHINA. Grouse, Partridge, or Dark. Chickens of 1853.

120. Prize, Mr. J. R. Rodbard, near Bristol.

Class 8.—COCHIN-CHINA. Grouse, Partridge, or Dark. More than one-year-old.

129. Prize, Mr. Mapplebeck, Birmingham.

Class 9.—COCHIN-CHINA. White. Chickens of 1853.

142. Prize, Mr. Hodgkinson, Yardley.

Class 10.—COCHIN-CHINA. White. More than one year old.

No competition. The judges strongly reprehend the practice of sending fowls for competition with visible marks.

Class 11.—GAME. Black-breasted Red. Any age.

151. Prize, Mr. B. Williams, Handsworth.

Class 13.—GAME. Duckwings and others.

157. Prize, Mr. N. Dyer, Bredon.

- Class 14.—HAMBURGH. Gold or Silver-pencilled. Any age.
 160. First prize, Mr. T. Whittington, jun., Henley-in-Arden. 179. Second prize, Mr. T. Whittington, jun., Henley-in-Arden.
- Class 15.—HAMBURGH. Gold or Silver-spangled. Any age.
 200. First prize, Mr. Joseph Jordan, Birmingham. 195. Second prize, Mr. Joseph Jordan, Birmingham.
- Class 16.—POLANDS, with White Crests. Any age.
 204. Prize, Mr. John Westwood, Walsall.
- Class 17.—POLAND. Golden-spangled. Any age.
 205. Prize, Mr. Rawson, Walton-on-Thames.
- Class 18.—POLAND. Silver-spangled. Any age.
 209. Prize, Mr. Rawson, Walton-on-Thames.
 (The whole Class highly meritorious.)
- Class 20.—ANY OTHER VARIETY.
 219. Prize, Mr. John Dain, Henley-in-Arden. (Black Bantams.)
 220. Prize, Mr. Henry Herbert, Powick. (Cuckoo Fowls.) 221. Prize, Mr. C. Thorold, Twynning Park, Tewkesbury. (White Bantams or Dwarf Poland!)
 Class 21.—GEESE. Hatched in 1853.
 250. Prize, Mrs. H. Hill, Stretton Grandison. (Irish and Toulouse.)
 Class 22.—DUCKS (Aylesbury). Hatched in 1853.
 264. Prize, Mr. W. G. Breavington, Hounslow.
- Class 24.—ANY USEFUL FOWL. Hatched in 1853.
 (Confined to Worcestershire Farmers.)
 224. First prize, Mr. James Bennett, Cowley Park. 230. Second prize, Miss Raester, Mathon Park.
- Class 25.—ANY USEFUL FOWL. More than one year old.
 (Worcestershire Farmers.)
 235. First prize, Mr. Joseph Jones, Cockshoot Farm. 237. Second prize, Mrs. Need, Barnard's Green.
- COTTAGERS CLASSES.
- Class 1.—CHICKENS OF 1853.
 271. First prize, William Brewer, The Link. 270. Second prize, Abigail Pitt, Mathon. 268. Third prize, Henry Pitt, West Malvern.
- Class 2.—MORE THAN ONE YEAR OLD.
 273. First prize, Mary Cross, Valley Cottage, Malvern. 275. Second prize, William Brewer, The Link. 276. Third prize, Charles Thomas, Mason's Farm.
- Class 3.—GEESE.
 282. First prize, Susan Burrows, Newland. 280. Second prize, Henry Griffiths, Malvern Common. 281. Third prize, Eliza Tudge, Malvern Link.
- Class 4.—DUCKS.
 290. First prize, George Robinson, The Link. 291. Second prize, William Brewer, The Link. 289. Third prize, Thomas Burrows, Pool Brook.

HOGG'S EDGING TILES.

WHEN a man or woman goes from home on a sight-seeing journey, neither of them ought to close their eyes, as some people do, who do not care to see the value of a straw on either side of the way, unless that straw happens to belong, in some way or other, to their own peculiar hobbies; no matter how eccentric or useless such hobbies may appear to the rest of the world, or to their own fellow-travellers; and if that be true about trifles, how much more wide-awake ought every one to be in the midst of facts and circumstances pertaining to his own calling or craft.

When I went down into Suffolk, the other day, to see the improvements at Shrubland Park, the ruling passion broke out all over me, the moment I got clear of the London smoke, on seeing the plague and pestilence to which the Essex farmers are exposed by the carelessness, or indifference, of the Managers of the Eastern Counties Railway—"Colchester line"—in allowing the common Ragwort to grow and seed along the banks of their Colchester line down to opposite Mr. Mechi's farm, when Mr. Mechi, and all other good farmers, know, or ought to know, that this is the most troublesome and exhausting weed their lands can be infested with; and that the seeds from one ordinary-sized plant of this ragged weed are sufficient to infect fifty acres of land. "Thinks I to myself," if it is too costly to root out this pest from the banks, surely they might get boys, or some aged grandmamas, to cut off the flowering heads with old hooks, and burn them, for nothing short of burning will prevent the ripening of the seeds, when once the flowers open on the plant. After these weeds, whole fields of turnips, sown broadcast on the level, increased my uneasiness, and my reflections on special remedies for such *wastries*, as they say in Scotland. And thus I went on all through the journey,

like a man on a voyage of discovery, who met, at every turn, with things as they ought not to be, and resolving, in his own mind, how they ought, and should be, and *would be*, if he had the ordering about their management. As soon, however, as I saw the effect produced, by Sir Charles Barry, with his massive stone curbs or edgings to the flower-beds in the balcony garden, at Shrubland Park, I altered my tune, and "Says I to myself," our Box edgings are not the real thing after all; the clinging to them is an inborn prejudice among us gardeners; no edgings are, or can hardly be, more expensive than those of Box; and without great care they soon get ragged, and out of joint, and look anything but creditable to a garden.

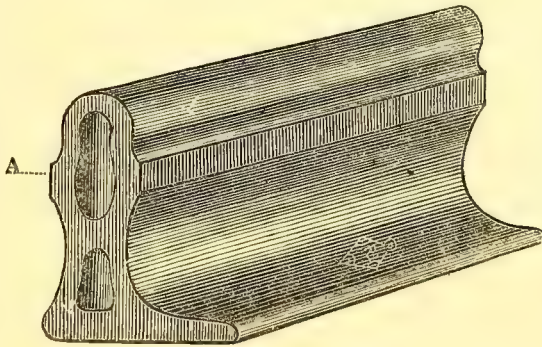
The next thought was, where is the money to come from for buying stone edgings, if I made up my mind to recommend none other in THE COTTAGE GARDENER? for, I must confess, that very little persuasion would induce me, then and there, to proclaim war and warfare against Box edgings all over the face of the country; or if they could be tolerated in dressed grounds, they must needs be no less than four inches high above the gravel, square on the top, and not narrower than six inches, and for every two inches more in breadth, the rise ought to be one quarter-of-an-inch, and no more. So, that in the long run, stone edgings would be cheaper even than Box ones on this plan; and even dearer in the vicinity of large towns, where Box is always of more value than it is far away in the country. It is also more liable to go off near towns, and consequently is more troublesome to keep in proper repair in suburban gardens; hence the turn to slate edgings of late years round London, and other large towns; but ordinary slate edgings are objected to on two grounds: the want of cheering colour, and the want of anything like massiveness in the lines formed by it; not that one garden in five hundred would need such massive *artificial edgings* as are so much in character at Shrubland Park. What we really want is a good, cheap article, in imitation of stone, for garden edgings, in this country where stone itself is so dear; just as we have bricks for building our houses, and stucco to cover them in imitation of stone; while in Scotland they build all their best houses with the very best kind of stone, as being cheaper than bricks; indeed, I never saw a brick-built house till I landed in London; and when I saw them plastering cement over the bricks to make believe they were stones, I thought the Englishers got to the end of their *tether* in cheating the senses; but that was only prejudice in favour of stone, like our old prejudice in favour of Box edgings, and both must give way to a better and more economical state of things.

Among the subjects that were recommended to gardeners to try their luck with at the Crystal Palace, in 1851, was, "another material that would prove highly useful, would be a cheap earthenware edging to flower-beds and walks; what we now have is too dear and too ill made," so that the new edgings, or the desire for improved edgings, did not originate with me; I was only smitten with the *desire* when I saw the effect produced by Sir Charles Barry at Shrubland Park, and from that moment I set my wits to work to find out the best substitute for stone edgings. I recollected, the Horticultural Society had given a representation of a new edging tile by Mr. Hogg, in their "Journal" of last year; that they said it was the best that ever was seen; and, moreover, that their Vice-Secretary added to the bargain, that this "kind of edging appears to possess much merit. It is hard, good-looking, a good colour, cheap, and enables the walks to be relieved of water." I say, notwithstanding all this, I have known this society, and other societies as well as they, put forth statements to which country gardeners could not altogether assent to without more enquiry, and being still on my rounds, I called at Holland House, and Bedford Lodge, near Kensington, where I saw, for the first time, two of the most beautiful flower-gardens, in two different styles, that can be seen within many miles of London; and then I learned that Mr. Hogg's place, at Brompton, was not far out of my way, and nothing would do but I must go over and see his edging tiles as managed by himself.

Now, after seeing them laid down in his own garden, and judging for myself, I must certainly say that the Horticultural Society's estimate of their merits is rather below than above the mark. They are of a warm stone-colour, and of a shape that any labourer can lay down so as to be

as firm and durable as if they were cut out of the very best stone. The side next the soil is perpendicular, so that the bed or border can be dug by any one without the least fear of disturbing or misplacing them, while on the side next the gravel there is a heel on which they rest, and over which the gravel can be packed, or concreted so firmly as to keep them safe in their place against the pressure of the roller, or any other disturbing cause; and they are so hard that the weight of an ordinary garden roller has no effect on them; a barrow full of dung, or soil, can also be wheeled over them, and across the border with no danger whatever; and if water accumulates by the side of the walk, it is safely conveyed away through the hollows in these tiles into the soil on the other side as effectually as if the whole side of the walk were drained with open pipes. Another famous contrivance is for making curves, and for turning at sharp corners; this is effected by very short pieces cast on purpose. The clay of which they are made is akin to that of which they make the white bricks at Woolpit, and other parts of Suffolk—at Shrubland Park to wit. These white bricks are the most durable of all clay bricks, yet I have known a hard winter split some of the best of them, and possibly it may be so with some of these tiles, here and there, but to raise a question on that head of the subject would argue as much sense and forethought as to say that we should not build garden walls, or even houses of clay-made bricks, because it was ascertained that a brick, here or there, was not hard enough to resist the alternate actions of rain and frost. Altogether, I am gratified to be able to add my testimony to Mr. Hogg's edging tiles, as being the best substitute for stone that has yet been brought under our notice.—D. BEATON.

[After seeing the grossly unfair treatment Mr. Hogg has recently sustained in the columns of a contemporary, we have great pleasure in inserting the above, and in adding the following woodcut and directions, which we have obtained by application to Mr. Hogg.—ED. C. G.]



Directions for placing the tiles.—After making the margins of the walks perfectly level, as is done for Box edging, let a line be laid, and a trench taken out two or three inches wider than the sole of the tile. The bed of this trench must be made perfectly solid by treading or ramming it so as to prevent the tiles from sinking. The tiles are then to be placed in the trench with the foot towards the walk, and at such a depth as just to leave the top of the plinth (as at A in the figure,) level with the surface of the ground. If the tiles do not fit exactly to each other, they may be cut or chipped with a trowel, or old hatchet, as builders do bricks. They may also be mitred, or reduced to any length by cutting through the moulding with an old saw, and then chipping off with a chisel and mallet. For placing the short lengths to form curves, the best way is to string the requisite number on a piece of iron or wooden hoop, and then to bend them round the curve, filling up the interstices between them with Roman, Portland, or any other cement that will stand the weather. After they are well settled, any irregularities may be removed with a rasp.

GREY SHANGHAES.

I HAVE seen, in several recent numbers of THE COTTAGE GARDENER, frequent communications and letters relative to the Brahma Poutra Controversy, and my name being mentioned in connection with it, I think it due to myself to state to you the facts of the case, in as few words as possible.

In the summer of 1852, I was induced to apply to Dr. Bennett, of Boston, U.S., for some Brahma Poutra Fowls, having read a glowing description of them in an American paper. In September, 1852, I received from Dr. Bennett a pair of these fowls (the first, I believe, that were ever imported into this country). I was much pleased with them, and having communicated my approval to Dr. Bennett, he thought proper, unsolicited by me, to send to Liverpool four more pairs of Brahma Poutras, requesting me to dispose of them for him to the best advantage.

Being naturally somewhat embarrassed by this consignment, Dr. Gwynne kindly offered his assistance in disposing of these birds, and I never saw them, as he took them from Liverpool to his own residence at Sandback.

I exhibited my pair of Brahmas, at Birmingham, in December, 1852. They received no prize, and were not in any way noticed. I believe those shown by Dr. Gwynne shared a similar fate. They were the same week put up to auction at Birmingham, and, I believe, were bought in at a low price. In January, 1853, my pair of Brahmas were purchased of me by Mr. Bowman, of Penzance, and, I believe, he has recently parted with them to Mr. Sheehan. Now, with reference to the Grey Shanghaes, their history is briefly this:—In the summer of 1851, I purchased, from Mr. Turner, three Pullets and a Cockerel, and I exhibited them, at Birmingham, in December of the same year; they had a first prize awarded them, and were immediately bought by Mr. Bond, of Leeds, who, I believe, retained them for some time in his possession. I do not know if he still has them. From the above statement, you will, I think, be convinced that the Brahma Poutras and Grey Shanghaes belonging to me were perfectly distinct and different breeds.

Eaton Mascall.

S. H. HOSIER WILLIAMS.

[We are convinced that they came to Mrs. Hosier Williams from different sources, but not that they are distinct breeds.—ED. C. C.]

I TRUST yourself and readers are not tired of the *Brahma Poutra* controversy, and being, in common with many other persons, a great admirer of this beautiful variety of Poultry, cannot refrain from again addressing you in their behalf, and in reply to your correspondent, who has now favoured us with some initials; perhaps, in his next communication, he will give us his name; and I trust he will not be offended by my stating my opinion, that it would be more straightforward to do so.

In the first place, he contradicts my statement as to the fact of the Grey chickens being positively sold. I confidently state they were sold; in proof of which assertion, beg to say, I bought the best pair among them myself; and, if one lot was bought in, it was as much as there was, but I doubt even that. The pair I bought turned out very nice birds, and were greatly admired this spring, and I could have sold all the eggs this season at 30s. per dozen. They will not, however, bear any comparison with the birds I have from Her Majesty's and Dr. Gwynne's stocks; and, moreover, their chickens have been Silver Cinnamons, very good, and I have sold them at £2 to £2 10s. each. Now, in opposition to this, all the chickens bred by Dr. Gwynne, Mr. Sheehan, and others, have been Grey, and so also are some chickens from Mr. Gilbert's birds, which I have seen, and remarkably fine birds too, larger considerably than some Buff birds hatched at the same time; being only three or four weeks old, it is impossible to tell what they will be, but at present are very promising. Your correspondent very felicitously calls attention to those low-priced Greys; but how ominously silent he is with reference to the other sale quoted by me, when they fetched pounds instead of shillings. What does he say to this? Can he account for it? Was it because nobody liked them, that they gave good prices for them? He states, also, in his last communication, that birds as pure in colour as the true strain could be produced from Grey and Buff parents. Granted, they may do so; but one parent must be of the right colour, or, I feel convinced, it would be indeed a hopeless task to

attempt it; and having produced some birds of the required colour, will he venture to say that it could be perpetuated from them? Will the offspring of birds thus crossed come as true to feather as those from the pure branches? I can only say, that my experience (as instanced in the case of my first pair of Greys) has proved the contrary; and I should think, from the "many years experience in all poultry matters" which he professes (and which I do not), that he must be quite aware of this fact as applied to all cross-bred birds. This brings to my mind, that in my former letter there occurred a misprint—the word *point* there printed should be *parent*—you will then see that he is answered on this point in anticipation. If your correspondent doubts the fact of these birds being imported from America, he can have ample evidence of the truth of it, if he will take the trouble to enquire; and I believe I am not wrong, or committing a breach of confidence, in stating, that there are, at this moment, on the passage from New York, some of the finest birds that could be procured in America, consigned to a gentleman of high standing in the poultry world.

I think, your correspondent "Verax" is scarcely justified in putting down as *humbug* the opinions of men perhaps as well qualified as himself to form one; the only grounds he gives for doing so, is having been imposed on himself; but if some unprincipled person has foisted cross for pure bred birds on him, that is no reason he should condemn the whole; in fact, his admission of the half-bred birds being sold to him as pure, is, in my opinion, a tacit acknowledgment of the existence of *pure birds* somewhere, but he has not been fortunate enough to procure them, if he had, we should, perhaps, have heard from him in a different spirit. And now, sir, perhaps you will permit me to say a few words on your remarks, and will endeavour to do so in all fairness of spirit. In your paper of the 22nd, you say, in reference to the admirers of Brahma Poutras, "that they will soon expose their own follies," alluding to the difference of opinion as to the Pea or Single Comb being most desirable. Why should you condemn, as a folly, the mere fact of another person admiring that which you do not? and if there be a difference of opinion on the subject of the comb, does not the same remark apply to the Dorking family? And I have never known you to denounce the man who preferred a single to a Rose-combed Dorking, or *vice versa*. You also warn your readers against another folly, viz., giving high prices for these birds. Why should you do so? You have never found fault with the prices given for Buffs; on the contrary, when any birds have realised extraordinary prices, you have always, rather triumphantly, called attention to the fact; and it is not very long since you also mentioned having sold some early chickens of your own at rather high prices; and, I am sure, no one envied or found fault with you for having done so. It is, no doubt, a laudable thing for a journalist to protect his readers, and warn them against imposition; but, in this case, I trust you will pardon me for saying that your zeal for the public good may, in my opinion, have carried you a little too far. I believe the Greys will become great favourites with the public, but they should be left to take their chance with others, and not be written down through prejudice (such I believe your correspondent's feelings to be). For myself, I can only say, I should never have dreamed of troubling you with any remarks of mine, but for his letter, and am quite content to let the subject drop, and allow the birds to stand on their merits, of which they possess not a few, and which the numerous poultry shows afford such opportunities of being brought before the public.

P. JONES, JUN.

[We have nothing to object to in the tone of this letter, and have only omitted one sentence, attributing motives to a third party, which motives no one need endeavour to discover—what we have to deal with are facts. Mr. Jones, Mr. Sheehan, Dr. Gwynne, and some others, think highly of the Grey Shanghaes; others, more in number, and high authorities among poultry fanciers, think quite the reverse of their merits. Time will show who is correct. If they do prove such highly meritorious birds as their possessors would have others join them in believing, then not one word will be published by us against prices commensurate being paid for them. What we have warned our readers against, and we repeat the warning, is giving high prices for birds or eggs until their high merit is established.—Ed. C. G.]

TO CORRESPONDENTS.

**** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."**

PREVENTING FREEZING BETWEEN GLASS-LAPPIINGS.—The following suggestion of "A Worcestershire Man" is certainly worthy of a trial:—"Too much depth lap over in the panes of glass, in greenhouses, is very apt to cause the wet to get between the laps, and to freeze, and crack the panes. Would not a little salt brine poured on, so as to soak between the laps, prevent the freezing?"

TEMPORARY RESIDENCE FOR GOVERNESSES (Clericus).—This is quite out of our track, but happening to know something of its management, and of the lady, Miss Welch, who superintends its affairs, we can recommend it for your support without any reservation. You had better write to her at 19 A, Osnaburgh Square.

CATERPILLAR (Olga).—The caterpillar that comes nearest to your description, we think, is that of the Goat Moth (*Cossus ligniperda*). Had it not a goat-like smell?

TAN AS A PREVENTIVE OF CATERPILLARS.—F. B. R. will be obliged by E. C. informing him at what season he applies the tan to the trees, in what quantities, and whether under each tree separately, or all over the surface of the bed?

CHLOROFORM FOR STUPIFYING BEES (Mudgee).—Try one drachm; if that is not enough, it is easy to use a little more. Do not sprinkle the bees with either syrup or anything else; put the hive over as before as soon as the bees begin to revive.

OXALIS SPECTABILIS (A New Subscriber).—We suspect your species is identical with the *Braziliensis* of THE COTTAGE GARDENER'S DICTIONARY, a small, rose-coloured species from Brazil. It would do well in a cold frame, or even in a border secured from frost; but, unless you had much of it, we would advise keeping it under shelter. You may plant when you like, but forbear giving water until vegetation in the bulbs commences. By merely attending to this, the whole genus may be brought into bloom at almost any time, by altering, by little and little, their resting period.

WINTERING GERANIUMS (Ibid).—You may keep such as *Ajax*, *Philo*, &c., in a frame; but you will have considerable trouble in keeping them dry enough. You must not attempt to grow them much, until the day changes in spring. See remarks on *pits*, &c., last week.

HYDRANGEAS NOT BLOOMING (O. P.).—The wood had not been sufficiently matured last season. If you had stopped their growth some time before pruning them, and had shortened or removed a few of the upper leaves, kept the plants rather dry, and the stems fully exposed to the sun, it is likely that every bud you left after pruning would have given you a shoot surmounted by a head of bloom. Keep this ripening of wood process in view now, or you may have the same complaint next year, as your plants are growing well. In fact, the wood ought to be firm at the base of the shoots before now. We have some out-of-doors, but the cold, damp autumn last year left the wood so spongy that we have vigorous growth, and but little or no bloom.

CAMELLIAS AND ORANGE-TREES (Ibid).—We have so often alluded to these, in almost every imaginable circumstance, that we hardly know of one additional *wrinkle* we could give you. We will think the matter over, however, and try; but we should know better how to suit you, if we knew the points on which you chiefly wanted information.

RAISING FINE SORTS OF CALCEOLARIA (Ibid).—You must first of all buy the best to be got, and then carefully hybridize the flowers; allow only a few seeds to ripen on the best plants; sow these carefully, soon after being gathered; keep with great care over the winter; bloom in small pots; and keep those only that are decidedly superior. This is the mode for fine florist's varieties. If you want them for the border, a shrubby habit, flowers rather small, and with little or no opening in the slipper, must form criteria of excellence. For them, the mother plant, at least, should be of a shrubby habit.

CONVERTING A GREENHOUSE VINERY INTO A CONSERVATORY VINERY (A Friend).—By the sketch given, we are informed the house is nine feet wide, and seventeen feet long. We presume there is a brick wall, front and ends, some two-and-a-half feet in height; front sashes three-and-a-half feet high, making a height of six feet altogether, and that the back wall is some twelve or fourteen feet high. We also presume that the Vines are brought in at the front wall, the roots being in a border outside. The door is in the end, some two-and-a-half feet wide, and placed a foot or fifteen inches from the front of the house, and thus leaving room for a narrow shelf there for small plants, if deemed advisable. If in anything we have surmised wrong, or a more detailed account of your other glass conveniences might alter our opinion, we would be glad to hear from you, as we would wish to give all the help possible in the circumstances. Now, in answer to your questions—First. It is perfectly practicable retaining the Vine on the rafters, "to convert the greenhouse into a conservatory, by removing the stand, and substituting a border six feet wide, and the length of the house." But, second. The proposed mode of planting it with "Fuchsias, Camellias, Orange-trees, Deutzias, Azaleas, &c.," and covering the back wall behind with Camellias, Jasmines, &c.," is open to some exception. The beauty of such a house would consist in having plants that would suit the treatment given to the Vine, premising that but little in the way of forcing was given to that fruit. Now, a *Fuchsia*, in such circumstances, would grow freely, and, for the first months in spring, it would blow freely, but afterwards, from the shade of the Vine, the blooms would lose in richness of colour, and luxuriance of foliage would so increase, until all the space would soon be occupied with a few plants.

The same of the *Deutzia*, when done flowering, and a free growth made, it would require more air and sun-light than it would be prudent to give when the Vines were swelling and ripening their fruit. On the other hand, *Camellias*, *Oranges*, *Azaleas*, and things of that nature, would answer admirably. They would bloom in winter and spring, and the early months of summer. By allowing the Vine to start almost naturally, you would begin to keep the house closer and warmer, just when you wanted your plants also to make fresh growth. When that was getting on nicely, a withdrawing of water would cause them to set their buds; and as the Grapes reached maturity, the thinning away of laterals, the freer admission of air, would thus let in more light to consolidate the wood, and ripen the buds, and by the time the Vine-leaves were getting yellow, your *Camellias* would be coming into bloom, being followed by the *Azaleas* and *Oranges*, there being no danger of exciting the Vines, if the night temperature was seldom, by artificial means, above 45°. And, third, The mode of making the border, namely, building a four-inch wall in front two feet high, from which the border is to slope back to the north wall, is all well enough, provided the slope is *upwards*, and not *downwards*; the part at the back wall being six inches or so higher than the soil at the two-feet wall in front. The earth platform would thus answer the purpose of the wooden stage. But in planting such a border, a good drain should have been previously secured beneath it. With this drainage secured, a kerb of six, nine, or twelve inches in height, would just answer as well as the two-feet wall, and would enable you to have larger plants in the bed without unduly shading the back wall. Fourth, "The leaving a hollow formed by cement on the top of the four-inch wall, to receive mould for planting *Lycopodiums*," is a good idea for securing a beautiful, evergreen, topped kerb, but we rather fear the means used will be somewhat rickety, and be very apt to be cracked, and displaced in the process of watering, while the space secured must be very narrow indeed. We would prefer to have small, square, earthenware vessels, with the sides made thin, the width of the four-inch bricks, with holes pierced in them for drainage, on the border side, and failing that, we would dispense, even then, with the cement trough, and plant the *Lycopodiums* close to the wall, and they would soon cover, and hang down over its tops. But, fifthly, Before you prepared compost, and commenced planting-out, we would advise you to think over how very few plants of a largish size, which, after allowing two feet for the back wall, you could give room to in a space seventeen feet by four feet, and then enquire whether, for a twelvemonth, or even several years, you could be content to look upon the same plants in identically the same position, in bloom and out of bloom, without the power of easily moving or replacing them. And, now, lastly, allow us to say what we should be inclined to do, in such a case, where the natural ease and gracefulness of the conservatory planting-out mode was an indispensable. Against the back wall, and twenty inches from it, we would build a four-inch brick wall so high as to be an inch or two below the soil of the border. We would then divide this little pit, twenty inches wide, into four or five divisions, by brick, on bed or on edge, to give a distinct place to each plant against the back wall, so that a plant might be destroyed, and fresh soil given to another, without disturbing the roots of the rest. The bottom of each of these compartments would have access to the drain. These plants against the north wall would be all we would plant out. This would leave a border four feet in width. We would have a kerb in front for it, high or low, according to taste, not forgetting arrangements for the pretty *Lycopods*; but this border we would fill with fine sandy soil, or rather rough sand, to the requisite depth, and in that, instead of planting-out, would plunge favourite plants, covering the pots; and then, by having it in our power to change them out and in at will, we could give an interest, a beauty, and variety, to a small house, which no planting-out, stereotype fashion, could ever yield; while the plants themselves, when in a peculiar condition, could receive the peculiar treatment they required; and when such a thing as insects came, the cleansing remedies might be referred to without subjecting the clean and healthy inmates to sanitary quarantine.

FRUITS FOR EXHIBITION (J. Hayward).—The best sorts of the following fruits, to grow as espaliers for exhibition, would be APPLES for dessert:—Red and White Ingestre, Boston Russet, Cockle Pippin, Braddick's Nonpareil, Court of Wick, and Sturmer Pippin; for kitchen use, Alfriston, Reinette Blanche d'Espagne, Beauty of Kent, Waltham Abbey Seedling, Cellini, Striped Beefing, and Wormsley Pippin. PEARS—Van Mons, Léon le Clerc, Eyewood, Beurré Diel, Forcille, Duchesse d'Angoulême, Beurré de Rance, and Easter Beurré. PLUMS—Reine Claude Violette, Jefferson, Washington, Halings's Superb, Pond's Seedling, Nectarine, and Royal Hâtive. CHERRIES—Black Tartarian, Bigarreau Napoleon, Black Eagle, Elton, Reine Hortense, and Early Purple Guigne. FIG—Brown Turkey. Peaches, Nectarines, and Apricots, will not do as espaliers, but all the others will do well in your garden. The best time for planting, if the situation is dry, will be in November; but if wet, in February or March.

GARDENIA STANLEYANA (Querist).—If you had a lateinery, where Grapes are kept to the end of February, and where a dry heat of from 45° to 55° is kept up all through the winter, your plant of *Gardenia Stanleyana* might be kept there, and the flower-buds would not swell much more than they are at present. After that, with a dry sunny March, your plant would be in bloom through next April and May. An intermediate house, where Mexican Orchids stand at rest through the winter, is the next best place for it; but in a regular moist stove the flower-buds will all drop before the end of January. What your plant really wants is to be closely pruned by the end of February, and to receive strong forcing for three months after, and if it showed bloom-buds before the end of May, to be kept in heat till they began to open; if no flower-buds appeared before Midsummer, the plant should be checked by turning it into a cooler, drier, and more airy house, where it would begin to show signs of flower-buds late in August. From that time, to the turn of the new year, the plant ought to be considered at rest, so as to keep back the flowers till the spring.

CONCRETE WALKS (L.).—The communication you inquire about is in No. 239, p. 63.

DEALERS PRIZE AT THE SURREY ZOOLOGICAL GARDENS.—We are informed by Mr. Charles Bambridge, of Birmingham, that the Judges at the Poultry Show at the above-named Gardens, eventually gave him the Prize "for the largest number of good specimens exhibited by any dealer."

CHANGE OF POULTRY STOCK (A Country Rector).—Get rid at once of your present birds and buy some Shanghai Pullets hatched in April, and put to them a Dorking Cock. They will lay all the winter.

HEATING A GREENHOUSE (F. H. L.).—A Gas Stove will not answer your purpose. The most cheap, at first, will be the old furnace and flue; the most effectual, a boiler and iron pipes for hot-water.

KIDNEY BEANS (A Constant Reader).—They are the largest we ever saw (some being ten inches in length). It comes nearest to the *Sabre*. If you will send us half-a-dozen ripe seeds we shall be able to be more certain. See what Mr. Errington says about Wall Trees.

QUEEN-BEE DEAD.—T. N. says,—"A few days ago (Sept. 10th), I observed an unusual commotion with one of my stocks of Bees; and in going to ascertain the cause, I observed the Queen on the ground, in front of the hive, dead. Now will the Bees be able to provide another; and if so, will she be fertile?" It is very doubtful if your Bees will be able to make another Queen at this advanced period of the season, and it is still more doubtful if she will be fertile; therefore, if the stock is one you wish to preserve, unite with it the Bees from any weak stock you may happen to have; those from a cast of the present year would be best, for you will then insure a young Queen.

FOOD FOR BEES (Abelie).—One pound of loaf sugar, one quarter pint of water, one quarter pound of honey; simmer all together for three minutes over a slow fire, or till the sugar is melted.

A COW MILKING HERSELF (A Constant Subscriber).—When a cow sucks her own milk, the best plan is to get rid of her, except in case it is desirable to keep her for fancy sake; then I should recommend a leather halter to be worn about the head, attached to which should be a thong-strap across the nose, with sharp pointed nails inserted, and projecting similar to calf-muzzles, which are used to prevent calves from sucking after being weaned.—J. B.

TURKEYS BECOMING BLIND (J. J.).—It is quite impossible to state anything regarding the blindness of these birds, unless some details are given. Blindness may occur from several diseases, and it would be worse than useless to prescribe at hazard.—W. B. T.

SPANISH COCKEREL WITH WHITE FEATHERS (T. F.).—Little encouragement can be held out that the white feathers on the breast of your Spanish Cockerel will disappear with his moult. The Spanish fowl, indeed, frequently undergoes extensive changes of colour during that process, but "white" is more generally the colour assumed, not that which is laid aside. Curvature of the spine may either have been produced by a blow, or be the result of hereditary deformity, that would not necessarily be developed at the earliest stages of growth, or if developed, often unnoticed till the bird gains size.—W.

BEAK OF THE AYLESBURY DUCK (G. T. H.).—The bill of the Aylesbury Duck is frequently disfigured by dark spots; usually, however, the older birds are those most seriously affected. The dirt in the cow-house is not by any means likely to have caused the evil, and we regard it as hereditary, though there are certain conditions, such as access to peat or moss-water, under which we should first expect to see it. Some of the best birds in England have suffered from this cause, for which, we fear, no remedy will be found effectual. We should at once change our stock where birds were intended for exhibition. See the article "Ducks" in the forthcoming number of the "*Poultry Book*."—W.

ARRANGEMENT OF LAND (G. T.).—It is quite impossible to advise you generally. We shall willingly be consulted on any specific point.

NAMES OF PLANTS (A Surrey Subscriber).—No. 1. The Grey Poplar, *Populus canescens*. No. 2. Turkey Oak, *Quercus cerris*. (R. D. J. Wigton).—1. *Lotus corniculatus*. 2. *Hydrocotyle vulgaris*. 3. *Tormentilla reptans*. 4. *Potentilla anserina*. (E. A. Liverpool).—The white flower is *Francoa ramosa*, and the other *Tropaeolum pentaphyllum*. Your *Crinum* will require water whilst growing. Pot your Passion Flower in the spring. It need not be stopped now. (W. S.).—The form of your *Dahlia* is good, size small, and colour very common. The name of the flower with it is *Asclepias curassavicus*. (A Constant Reader, Llanrwst).—No. 1. *Shepherdia argentea*. 2. *Aristolochia margin variegata*. 3. Uncertain. 4. *Escalonia rubra*. 5. *Atriplex halimus*. 6. *Staphylea pinnata*. 7. Uncertain. 8. *Celtis australis*. 9. *Cercis canadensis*. (J. P.).—Your evergreens are as follows:—1. *Pinus niger*. 2. *Cupressus thuyoides*. 3. *Thuja occidentalis*. 4. *T. orientalis*. 5. *Cupressus sempervirens* var. *horizontalis*. 6. *Pinus excelsa*. 7. *P. longifolia*. 8. *Juniperus Phœnicia*. 9. *J. Sabina*. 10. *J. Sabina nana*. 11. *Cedrus Libani*. 12. *Pinus insignis*. 13. *Juniperus tamariscifolia*. 14. *Pinus* sp., uncertain. 15. *Pinus* sp., uncertain.

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WEEKLY CALENDAR.

M D	D W	OCTOBER 20—26, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
20	Th	Hen Chaffinches flock.	30.357—30.151	59—33	S.	—	35 a. 6	55 a. 4	6 37	18	15 9	293
21	F	Sun's declination, 16° 47' s.	30.006—29.867	59—49	S.	26	36	53	7 7	19	15 19	294
22	S	Cuddy-moddy Gull inland.	29.762—29.642	60—51	S.	14	38	51	7 45	20	15 28	295
23	SUN	22 SUNDAY AFTER TRINITY.	29.686—29.652	58—40	S.W.	18	40	49	8 35	21	15 36	296
24	M	Short-eared Owl comes.	29.629—29.590	57—37	S.W.	65	42	47	9 36	22	15 44	297
25	Tu		29.446—29.285	50—31	W.	55	43	45	10 43	23	15 51	298
26	W	Whitethorn leaves fall.	29.377—28.877	49—30	S.	33	45	43	11 50	24	15 57	299

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 57° and 40.8° respectively. The greatest heat, 73°, occurred on the 21st in 1830; and the lowest cold, 20°, on the 21st in 1842. During the period 95 days were fine, and on 87 rain fell.

NEW PLANTS.

BRILLANTAISIA OWARIENSIS (*Ovarian Brillantaisia*).—This native of Africa is a *Lamium*-like stove plant, belonging to the natural order of *Acanthads* and to *Diandria Monogynia* of Linnaeus. It was discovered and named by M. Nees von Esenbeck, but some later botanists to whom specimens were submitted, overlooking its previous discovery, have severally named it *Belantheria lamium*, and *Leucographis lamium*. It has bloomed in the Chelsea Garden, where it was received from Sierra Leone. The dark purple flowers are like those of Sage, and are fully expanded in March. It is an under-shrub, about three feet high. — (*Botanical Magazine*, t. 4717.)

RHODODENDRON DALHOUSIE (*Lady Dalhousie's Rhododendron*).—This is one of the most striking of the Sikkim Rhododendrons, whether regard be had to its large White-Lily-like flowers, or its native mode of epiphytal growth in moss, upon the branches of trees in the damp forests of East Nepal, Sikkim, and Bhotan. It is there found at an elevation of from 6,000 to 9,000 feet. It is a straggling shrub, from six to eight feet high, bearing leaves and flowers only at the extremity of the branches. Seeds of it arrived in England during the spring of 1850, and in the March of 1853 it was for the first time bloomed here by Mr. Laing, gardener to the Earl of Rosslyn, at Dysart House, Kirkcaldy. His detail of the culture he adopted is as follows:—

"In January, 1852, I selected from our wood a vigorous plant of *Rhododendron Ponticum*, with a clean straight stem, about six feet high, removing all the lateral branches, and potting in an eight-inch pot. About the end of January it was placed in the stove, where it was soon after inarched with *R. Dalhousie*. As the young shoot of the latter began to harden, it was gradually cut through till separated, and the plant was removed to a cool greenhouse to rest. It very soon showed symptoms of making another growth, when it was transferred to the stove, to ripen its wood preparatory to its being again put into a cool house as the shoot ripened. Here it did not remain long before it made further progress, and again required the heat of the stove to ripen its third growth. About the end of October a flower-bud was formed, when water was gradually withheld until it was moderately dry at the roots, and the plant was removed to a cool greenhouse for the entire winter. About the third week in February, 1853, it was placed in the stove, and began to show colour on the 16th of this month. When the flowers first appeared they were of a greenish colour, which gradually changed into a yellow, which also has died away, until it is of the colour of the flower sent, and I have no doubt but ere the flower drop it will be nearly white (as represented in our plate). I may also state, that the plant has never been exposed out-of-doors: had it been so, the rusty colour on the upper surface of the leaf would very likely have been removed. The bark on the first shoot or growth is of a brown colour; but the other two growths are yet green."— (*Botanical Magazine*, t. 4718.)

SKIMMIA JAPONICA (*Japanese Skimmia*).—This is one of



the many instances of the absurd practice among botanists of naming plants by appending a Latin termination to the name by which they are known in the countries of which they are natives. The plant before us is called by the Japanese *Mijami-Skimmi*, and Thunberg has rendered it classical, but without condescending to enlighten us as to its meaning. Botanists differ as to the Natural Order in which it should be included, but they cannot be far from the truth who refer it to *Aurantiaceae*, for it partly resembles both the Lemon and Daphne. It is in the *Tetrandria Monogynia* of the Linnæan system. Sprengel calls it *Ilex Skimmia*. It is an evergreen shrub, about three or four feet high, and a native of the mountains near Nangasaki, in Japan. It was introduced by Mr. Fortune, and has endured, uninjured, two winters in the open ground of Messrs. Standish and Noble's nursery, but they bloomed it in a cool greenhouse. Every part of it is aromatic. Its white flowers, which open in early spring, resemble in fragrance the *Daphne odora*. "The evergreen shining leaves, the clusters of numerous graceful flowers, which all the summits of the branches produce, their perfume, and its scarlet berries at the close of autumn, justify its position as a decorative plant." (*Siebold*).— (*Botanical Magazine*, t. 4719.)

NOTHING in gardening, more forcibly than "the shuttlecock-seeded weeds," reminds us of the sterling wisdom contained in the old proverb, "a stitch in time saves nine." Every slovenly gardener and agriculturist knows

this to their cost. The Dandelion, the Groundsel, and the Thistle, may easily be picked up, cut down, or destroyed when in a young state. But just let them alone until their downy seeds are perfected, and hours,

and even years, may not be sufficient to get rid of their numerous progeny.

A few days ago, the writer of this was walking in company with a youth from cockney-land, when his companion directed attention to what, to him, was a most wonderful phenomenon. A few yards overhead there was nothing remarkable; but above that height, to as great an elevation as it was possible for the eye to discern small objects, the atmosphere was thickly studded with moving white flossy matter; which, he said, "could not be snow, as the sun was too hot to allow it to remain in such a peculiar stratum so long!" On gaining a higher ground all doubt was removed. The sun was shining very bright; and at a little height above the surface of the ground a brisk breeze was playing, and careering in it were myriads of Thistle seeds, accompanied with their wings of shuttlecock down carrying them hither and thither, until they found a suitable resting place in which to vegetate and grow; leading the cultivator, in future years, to surmise if some enemy had not purposely taken the darkness of night to crop his land with thistles.

The Londoner's notions of seed dispersion and sowing had been confined to the Mignonette pot, and the tiny border of Virginian Stock; and it was a wondrous tale to him, when told how certain plants had the power of dispersing their seeds, when ripe, by a sudden jerk of the seed-vessel; such plants being the Balsam, the Violet, the Broom, and the Pine: how the seed of the Feather Grass is furnished with a plume like an arrow, that helps to screw it into the earth, which plume then becomes the sport of the winds: how the wind, that in the present case brought so many unwelcome guests to the cultivator, in the shape of Thistles, Groundsels, and Dandelions, was also instrumental in carrying to great distances the next-to-viewless seeds of Lichens, Mosses, &c., and through their decay and reproduction, the wafting of large seeds, and the carrying of larger by birds, where there was a little earth in which to deposit them, rocks, once bare and rugged, had been clothed with verdure and vegetable loveliness: the winds just being one of those simple means which the Great Architect employs for carrying out His great and benevolent designs.

"I see clearly, now, why you sent a boy to pick up every bit of Groundsel before it was in bloom. I see the reason why another man on the carriage-road was picking up the roots of Dandelion; though in one case I thought what a destruction you were making among the food of the beautiful birds; and in the other, I could not help thinking about salads in winter, and substitutes for chicory in times of scarcity;" was the Londoner's reply. "But," he added, "there is one thing I cannot understand. I have been looking at hedge-sides by the highway, and at the divisions of fields, as I never did before; in fact, I have looked out for Thistles as well as brambleberries, and sorry am I to say, the former, with heads ready to fly, are more numerous than the latter. Surely, farmers and gardeners cannot believe that the Thistles will so increase, or each and every one of them would prevent a head of

Thistle down being seen on their premises, and take legal means for preventing either neighbours or road surveyors and managers, causing injury by their supineness and neglect."

Brothers of the spade and the plough, what say you to this finding? It is a poser, which, ere long, must be met, as any other great social or physical nuisance is met, in which the "right to do what I will with my own," must be determined by the *general good*.

Without speaking of fields, we, every day, by the side of hedges, and on the sides of our private parish and public roads, see these winged-seeded-weeds holding unchallenged sway; ever ready to scatter their produce far and near. Our Creator, who saw that labour was necessary to our happiness in our present condition, has furnished us with these and many other weeds and drawbacks as incentives to action; for though ever the attendants of neglect and sloth, they as invariably disappear beneath the tread and grasp of industrious, right-directed labour. As, therefore, the presence of such weeds by the hedge and wayside will tell upon the fields adjacent, and then upon those however distant, we are forced not only to see the mutual dependance, in this respect, of cultivators upon the right-heartedness, and integrity, and industry of each other, but are also reminded of a great moral and political truth, that if one class of the community, pluming itself on its wealth, its intellect, or its purity, neglect the poor, the ignorant, and the vicious, as weeds by the hedge-side, they will ultimately have to pay *dear* for their indifference,—a penalty which has been more than shadowed hitherto in pauperism, crime, disease, pestilence, the effects of which, just as in the case of the Thistle, cannot be confined to the spots where they originate.

The doctrine of mutual dependance—in other words, the principle evolved in the sacred words, "No man liveth to himself," or for himself, giving to the vicious their power for evil, and imparting to the virtuous their influence for good, is perhaps more acted upon now, especially as respects sanitary measures, than in years gone by—chiefly, we fear, because society will be driven to do that from *dread*, which it has long refused to do from the admonitions of *duty*. We know of gross evils now beginning to be rectified, the danger and existence of which were pointed out more than ten years ago. The young Londoner could tell of many a clearing out from lane and kennel. How? By the willing hands of the proprietors and residents? No! *They* were quite contented; *they* stood doggedly on the right "to do as they liked with their own;" *they* grumbled, and frowned, and fretted; but legal authority steps in and says—*we* will prevent you poisoning yourself if we can; *we* must keep you from sending your poisonous exhalations among your more cleanly disposed and respectable neighbours.

Well might the young Londoner wonder that there is no law to compel road trustees to clear the waysides from all such winged seeds—to force the farmer to secure the whole of them being pulled up, or cut down, before the seed approached maturity; or to prevent him

having a field thickly studded with heads of thistle-down, if so were his determination.

There is no accounting for tastes. A Scotchman is reported to have taken several heads of thistles to the antipodes, as mementos of father-land! and already the rich virgin maiden loam, fit for heavy corn crops, is becoming actually covered with this plague of a thistle! Some time ago we passed through the centre of a large field where the crop had failed, and saw a full quarter of an acre together of Groundsel in full seed, wanting only a slight breeze to scatter it far and near; though it seldom mounts so well as the Thistle. More lately, on a farm boasted about for its high agriculture, some of the hedges were bristling with Thistle-down, as if the cultivator, like our Scotch countryman, really loved the Thistle; and never could see or have too much of it! Public opinion—the laughing, the bantering, or the scowling such a system down might do much. But this opinion will be inoperative in some cases. There are minds so constituted as never to feel so pleased as when riding a hobby that they find their neighbours opposed to. Some other remedy must be held in reserve; and in these days, when the bubble of protection is fairly burst; and when, to secure abundance of food to the community, and independence and comfort to the cultivator, the earth must produce, in armfuls, something better than weeds; our legislature might soon do a more foolish thing than in passing a small penalty for every ripe head of Thistle-seed found in field, hedge, or wayside. R. F.

TIME was, and not many years since, when “a Pigeon Fancier” was associated in all men’s minds with Costermongers, Pugilists, Rat-catchers, and Dog-stealers, and for no other reason than we can discern than that the majority of Pigeon Fanciers were artisans—men who lived in the courts, alleys, and other by-places of the metropolis. Such men, in those days, drew towards them no sympathy—they were the profane vulgar—the pariahs of Society—and their pursuits were deemed scarcely fit to be mentioned within audience of “ears polite.” The Auricula and the Polyanthus became “vulgar flowers,” for they were pets of the Manchester and Spitalfields weavers; and the remnant of this bad spirit lingers with those who talk of abandoning Pine-culture, now that this fruit is become familiar to “common people.” Such pride and exclusiveness would have a heaven for gentility, with a wide gulph between that and the heaven of the poor.

Gladdened are we by the knowledge that these sentiments are gradually lessening both in intensity and in the number of their disciples, and respect for the man, rather than a belief in the degradation of his pursuit, is now felt for him who shows a taste for the purer occupations of life.

The cultivator of a Pansey in a court-yard of White-chapel, and the breeder of Pigeons in Drury Lane, is now more often thought of as one who exhibits a praiseworthy frame of mind—and that the love of nature

implanted in our first parents in their state of innocence being yet uneffaced, he is raised in the scale of worthiness. It is justly felt that he clings to all he can of the country—that though he cannot have a flower-border, he finds the best substitute within his reach in a flower-pot upon his window-sill—though he cannot have a poultry-yard, he has all he can of its tenants, over which to be solicitous in the pigeon-hutches of his attic. The man in whom such tastes remain and triumph over all opposing difficulties, so far from being altogether bad, is one in whom much that is estimable prevails. We have too long watched and made notes among Cottage Gardeners not to have had this fully proved, and to rejoice in the knowledge that it may be admitted as a rule, that he who loves the country loves virtue too.

How strong the prejudice must have been against the pursuits of the masses was never so strongly demonstrated as in the prejudice against the breeding of Fancy Pigeons. The Dove, or Pigeon, is associated with all that is holy in Christianity, and with much that was held sacred in Mythology. Its very name in Hebrew, *Jona*, is derived from a word signifying gentleness, and from the day it brought the olive-leaf to the ark, both the plant and its winged bearer have been esteemed emblematical of peace. Even the Brahmins tell of their deities assuming the form of the Dove; Mohamed had an attendant spirit in the same form; and in the same similitude has appeared the Divine Spirit. Yet, notwithstanding this sacred association, notwithstanding the gentleness and beauty of the bird, its rearing and cultivation, until very recently, has been anathematized as “a low pursuit.”

Common sense is prevailing, and, consequently, prejudice is giving way even here, and we are well pleased with the prospect of seeing the breeding of Pigeons improve by the side of poultry-keeping. Nor is this taste for Pigeons without the support of any one plea that can be urged in favour of rearing poultry. Beauty, gentleness, profit, are common to both, and in antiquity, the Dove-cote might claim precedence of the Fowl-house.

We might, without much difficulty, trace the rearing of Pigeons back to the remotest ages, and evidence is abundant, we think, to show that so far from our various breeds of Pigeons all owing their original parentage to the Stock Dove, that every region had its particular variety. On the present occasion, let us rest contented with the pigeon-keeping of the Romans.

If we turn to the pages of the agricultural writers of that great nation, we find that their knowledge on this subject was ample and accurate. The directions given for the erection of the Dove-houses, for feeding, for cleanliness, and other minute particulars, are such as might be repeated in the pages of a modern author, and accepted as sound instruction. There is one fact to which we will bear testimony, and which we do not remember to have found noticed in any modern author. “The whole Dove-cote, says Columella, ought to be polished with *white* plaister, for these birds are especially pleased with that colour.”

These conquerors of the world were acquainted with

several varieties. We find noticed "the *Roman*," and Columella says, "let not such as are of different kinds be joined together, as the *Alexandrian* and the *Campanian*." That they had the *Carrier* variety, we have this testimony of Pliny. "Pigeons have been employed as inter-messengers upon affairs of great urgency. Letters were sent annexed to their feet, to the camp of the Consul, by Decimus Brutus, whilst besieged in Modena. Of what avail were the trench and watchful sentinels of Antonius, when the messenger traversed the sky!" "Many men, adds Pliny, have such a love for these birds, that they build towers for them upon the roofs of their houses, and have pedigrees showing the purity and descent of each. Even the ancients, as exemplified in Lucius Axius, a Roman of the Equestrian Order, before the Pompeian civil war, sold every pair of his pigeons (*denarius quadringentis*) for £12 19s., as Marcus Varro has recorded. It is certain that some countries are very celebrated for the excellence of their breed, thus in *Campania* are considered the largest to be produced." Nor did the mania decrease, for Columella says—"I am ashamed of my own age, if we believe that some purchasers are to be found who have paid four thousand nummi (£32) for a pair of birds." What would the old Roman have written, if he had been at Stevens's auction, and seen £40 given for one! It is true that this one was a Shanghae cock, but for a century much larger prices, if we estimate the comparative weights, have been given for Fancy Pigeons in this country. Thus we have before us the account of a sale of nineteen pairs of "Powder Pigeons," on the 30th of December, 1761, in Beach Lane, London. They fetched £92 9s. 6d., and one pair was knocked down for sixteen guineas. Two pairs were afterwards re-sold for thirty-six guineas. An account of the sale is in Mr. Eaton's work, which we shall notice presently.

It was in the first half of the last century, that the cultivation of the Pigeon was most general in England, and during that period appeared the first works upon the subject that are to be found in our literature. The earliest of these publications was *The Columbarium*, by John Moore. This appeared in 1735, being followed, in 1765, by an anonymous *Treatise on Domestic Pigeons*, and in 1802, by Daniel Girtin's *Complete Pigeon Fancier*. There appeared, in 1804, *A Treatise on the Almond Tumbler*, by an un-named author, but who was a Mr. Windus, a London attorney, and now we have before us the whole combined in one volume, with a large amount of original notes, by John Matthews Eaton. His *Treatise on the Art of breeding and managing the Almond Tumbler* was published in 1851, and again, with the annotated work, in the present year, under the title of *A Treatise on Pigeons*.

It is the best and fullest work which has yet appeared upon the subject, and with it are given a portfolio of portraits, beautifully drawn and coloured, the size of life, of the Almond Tumbler, Bald Head, Beard, Black Mottle, Carrier, and Pouter.

We consider it the best work that has hitherto appeared relative to Pigeons, because it is the accumulated

experience of practical men arranged by one enthusiastically fond of the birds concerning which he writes. This enthusiasm carries him beyond the bounds of sober judgment occasionally, but no reader will consider this unpardonable, even although he goes the length of admiring an "Almond Tumbler," as the most beautiful of God's creatures, with the exception of woman!

Mr. Eaton is not a practiced writer, and, therefore, there is a freshness and raciness about his rambling that disarms criticism, and commands forgiveness, though he mingles Nelson, Peel, and Wellington, with Pouters, Croppers, and Tumblers, and hesitates not a moment to wander from the Dovecote to Wellington's Funeral, the Crystal Palace, and even his father's day of nativity! He is, in truth, the most vagrant of scribes—but there is a carelessness of rules, and an earnestness of purpose, that defies and disarms censure. It is rendered a very readable book by its imperfections, and we should be sorry to have it pruned into regularity.

The general detail of management, and more especially, perhaps, the mysteries of "*cross-matching*," and the selection of breeding-stock, with a view to the result desired in the progeny, are ably explained, with a liberality that is not always manifested by those individuals to whom the designation of "*fancier*" more properly belongs. The author, indeed, expresses apprehension that his endeavours to aid the novice in pigeon-breeding may be considered as an infringement of the brotherhood, but the higher, on this very ground, should be the award of merit and approbation. The feeling referred to existed among those to whom other birds, besides Pigeons, were an object of interest; and thus, had a Bantam fancier, some thirty years since, produced such a volume explanatory of his favourite's pedigree and management, less uncertainty would now prevail, though the author's subsequent position among "the gentlemen of the fancy" would probably have been far from enviable.

One great merit for which Mr. Eaton's book deserves a position on the shelves of every pigeon-keeper arises from its value as a record for upwards of 100 years of the various standards and points of excellence in the different varieties. It is so far from being the *ex parte* statement of the views and prejudices of an individual, that authorities, past and present, *pro* and *con*, are fairly placed in review before the reader, to whom Mr. Eaton then explains the reasons on which his own judgment would be grounded.

If we express a wish for any curtailment of the length to which the treatise has been prolonged, it proceeds from our belief that the more material portions of his work would thus have been more readily reached, and presented in a clearer form to the eye. Grammatical accuracy would have avoided many confused passages, and there are some few allusions to sacred names and subjects that are not introduced with the respect and reverence we should have desired.

Should another edition be called for, such alterations and corrections would render the book still more generally popular. Essentially a practical work, it

cannot fail, if properly employed, of answering the expectations of those who may purchase it, either with a view to mere rudimentary knowledge, or the acquisition of some of those dearly-cherished and scrupulously-guarded secrets of the "fancy" that are here boldly revealed for public information.

Enough has been said to shew our estimate of the value of Mr. Eaton's production, so let us now pass a step onwards, and regard the pigeon-fancier generally, with respect to the present system of exhibiting their birds at our Poultry Shows.

Horror and dismay, we imagine, would be manifestly portrayed on the countenances of many a member of the Columbarian, or similar Societies, were it proposed to place their cherished Carriers, Pouters, or Tumblers, under the same rules and principles of competition as the Birmingham, Metropolitan, and other leading Associations of the same description would require. Our remarks, hitherto tolerated, may here, perchance, be so utterly repugnant to long-cherished opinions that brook no contradiction, that the columns of our brother contributors may share the flames to which our own rashness may have exposed this present production. But we have a firm conviction that much was erroneous in the arbitrary standard of the pigeon-fancier of the present and former days, that may be rectified by the better principle of recent arrangements.

Let us take the case of the Carrier, for instance; in this, as in every other bird, or quadruped, of which we propose to ourselves the production in the most perfect form, we consider how far figure, and the other conditions of its existence, may be best adapted to the special object that we have in view. With the Carrier, the power of traversing great distances in the shortest space of time would, unquestionably, be the point we should all aim at; and the person, therefore, who is selected to arbitrate on the merits of competing birds, should scan their capabilities with particular reference to this one point; "*feather*," might turn the scale, if equality existed in the more material features. Now let us turn to Mr. Eaton as a faithful exponent of the standard, according to which judgment would now be pronounced by a member of a Society specially constituted for the Pigeon fancy. At page 40, we find, that according to Mr. Moore, "a Carrier is generally reckoned to have twelve properties, namely:—Three in the beak; three in the wattle; three in the head; three in the eye. Here it is evident that the points of merit are wholly limited to a very small portion only of the bird, the head; and we are, consequently, prepared to learn that more recent authorities have extended the area over which judgment should be given, while they limit the points, or properties, to five, namely, the beak, the wattle, the head, the eye, and lastly, the length and thinness of neck, and the length of body. But even here "*feather*" is excluded from the formal enumeration of what will be considered as points of merit, contrary, as we think, to the principle on which a bird of any kind, designed for other purposes than those of the table, should be judged. If it be said that this matters not with the

Carrier, because its capabilities of accomplishing extended flight are the main object we have in view, and, therefore, that, like a good horse, a good Carrier Pigeon cannot be of a bad colour, we are perfectly ready to assent to the assertion. But other features, be it remembered, beyond those that would conduce to great powers of flight, are arbitrarily brought into the calculation, some, indeed, that might well be thought likely to defeat that very object; why, therefore, should we not gratify our eye by having a bird of handsome plumage, as well as one with the wattle, or the orbit, of unnatural size. With respect to the wattle, indeed, we might say, so far as it is truly a characteristic of the Carrier, let us see to its due preservation; but why breed for such a bloated amplification of this feature, as must tend to obstruct the very object for which the bird itself is valued. We might just as well design the lines for a vessel with a view to extreme speed, and then suspend over her finely-drawn bows a couple of hogs-heads to deaden her way through the water. The extended beak, the long, narrow, and flat head, the thin neck, the muscular formation of the chest, and the well-developed wing, are all in character; but all, at the same time, directly append to the disproportionate size of the bloated excrescence of the wattle, now so greatly coveted.

With the "Tumbler," again, extraordinary agility in the air, the facility with which what in the circus is termed the "back spring," is performed by them, is the property that would have first brought the birds possessing it into favour, and which should ever since have been borne in view by their subsequent admirers. But we learn from Mr. Eaton (page 22, Almond Tumbler), it is not desirable to allow them their liberty, "since they are extremely weak and timid, and the least blast of wind would blow them down the chimneys, or one bird playing against another would have the same effect." Nor are we more likely to cultivate the variety from being told that the property of "*shortness of face*," including the most diminutive form to which the bill can possibly be reduced, is carried to that extent that the young bird frequently dies in the shell from the stunted proportions of this member being unable to chip through its case; and, even supposing it succeeds in this, that the same unnatural reduction of the parent's will prevents their feeding their young, who must, therefore, be either transferred to other Pigeons who have not thus suffered from the freaks of fancy, or else starve.

One more instance, and we have done. The epitome of excellence in a "*Pouter*" is made to consist of a huge globular swelling of the throat, slenderness of girth, and length of legs. We are certainly at a loss to conceive how any combination of those "properties" can be made subservient to the graceful appearance of any variety of birds that, like the Pigeon, possesses such natural elegance of form, and is, in every respect, so calculated for its habits of existence.

If we are here met with a declaration that the "gentlemen of the Fancy" have a right to select such

standards of excellence as custom has bequeathed to them, and have, too, endowed with special beauty in their own eyes, all we have to reply amounts to this, that they have a perfect right to gratify their "*fancy*," only we are unwilling to recognise that word as synonymous with beauty of appearance, or harmony with the unvarying combination of beauty and aptitude for their several conditions which distinguishes every work of nature.

Such abnormal productions as we have here alluded to may have many parallel instances in other animals; among them the unfortunate "Creepers and Jumpers," among the Bantams of former days; and the toy terrier of our own, but in the latter instance, we may still retain symmetry, although utility is lost. In the vegetable world, the labour of a life is thought by the Chinaman to be well recompensed by the stunted proportions of an orange-tree, or myrtle, or the diminutive club feet of his wife and daughters.

Fashion will probably long continue to exert its influence in encouraging similar eccentric results; but if there are still found those who reject the just proportions of the natural form in favour of such deformities, let them be satisfied with their success in having so far distorted the usual laws by which both the animal and vegetable kingdoms are governed, without desiring the acquiescence of others to their own theory of beauty, based on eccentricity, and contradiction to the requirements, as well as the natural condition, of the subject they choose to operate on.

In just comparison to what we have now complained of, may be mentioned the treatment of the beautiful "Archangel" Pigeon, recently introduced into this country. The "*Pigeon-fancy*" look with disfavour on this bird; and the question is asked, what are we to do with it? Is there any hope of breeding it up to the beak and wattle of the Carrier, or down to the beak and bullet-head of the Tumbler? To neither, if our entreaties may be heard; for rarely have colours been so well spotted, or figure and proportions so happily adapted, as in this singularly striking addition to our list of Pigeons. "*Let well alone*," is a good old motto; and we shall be well content to see Pouters overbalancing themselves on the house-tops; Carriers too precious to leave their owner's loft; and Tumblers without the power of using their wings; if the Archangel and others of the genus be left to us in the state in which we are now so fortunate as to possess them, and towards which perfection the breeder's art has, we imagine, done but little. To those whose patience has carried them through these remarks our meaning will be plain; it may, indeed, be thus briefly summed up, that the principle on which Pigeons are now being shown at our general Poultry Exhibitions is more likely to lead to their production in a better form, both as regards beauty of appearance, and agreement with the properties and characteristics of the different varieties, than where, as now and in former days, regard was exclusively given to certain exaggerated forms of their particular parts and members.

Nothing, however, is further from our intention or wish than any depreciation of the merits of Mr. Eaton's work: he is a faithful exponent of the views of those whom he designates as "*the fancy*," and the guarantee of long experience will render his treatise valuable to many who, like ourselves, are fond of his favourite birds, without being biassed by a standard which we conceive to be rather at variance with the power and properties on which excellence should be established.

THE PRESERVATION OF SALADS IN WINTER.

THIS constitutes no mean portion of the gardener's art, and requires a very just appreciation of those principles which have a tendency to arrest or ward off decay in the vegetable world. To say that a good salad bowl is a welcome addition to the dinner table, at whatever season, is no new tale; so much is it esteemed, that even the most unfortunate dyspeptic must frequently sigh when he sees this delightful accessory and may not partake of it. The principal salads that we have to consider are as follows:—Celery, Lettuce, Endive, Radishes, Cresses, &c.; a few others there be, but they claim little consideration. I will endeavour consecutively to offer advice to the uninformed.

CELERY.—The larger and grosser Celery is at the approach of winter, the more difficult it is to preserve, and the more liable to "run," or to "bolt," as practical men term it. Here, then, is an argument in favour of at least one portion of the Celery being late sown, and grown quickly, as advised in my former paper. I have known the remainder of plants left in a seed bed—not having been required at the "pricking-out" time—stand hard winters unharmed; whilst that in the bed, or rows, was nearly destroyed during a hard winter; albeit, the latter was duly protected.

By whatever plan, or at whatever season, Celery is grown, it is absolutely necessary that it be kept dry at the root in winter; and, I may add, in the foliage too, if possible; the latter, however, is not easily accomplished without too much expense, or ill-spaced labour. Those who suspect wet at the root, therefore, had better, as a beginning, take instant means to carry off this water. Draining, of course, will at once occur to the mind; but in many cases it is not necessary to have recourse to it; and, as it is quite necessary, some time in November, to soil or earth all Celery as deep as possible, in order to keep out frost; and such being practised, it will be found, generally, that the excavation of soil rendered necessary, will, of itself, give relief as to the superfluous moisture. In earthing-up for the last time, our practice is to press the soil as close to the plants as possible, as this not only keeps out frost in a degree, but prevents slugs, or other depredators, from entering readily: it also, of course, facilitates blanching to a higher level.

Everybody knows that Celery is liable to be defaced by the slug, which, as I take it, is the greatest pest of Celery. We have been in the habit of applying slacked lime for many years in order to destroy these rogues, or set them at nought, and, with unvarying success; for it is seldom we have suffered from their ravages, although our quarter is famed for them. The lime is applied when the Celery is about half grown, and is dusted liberally in each plant. But about winter matters. Celery, as to protection, requires very similar care to the rest of our half-hardy things, for so I must call it. My practice is to cover with long, loose, and dry litter, on the first severe frost; say one in which the thermometer went down to 24°. The ground is, of course, frozen hard, and this is necessary; for if covered up with the design

of entirely keeping out frost, it would soon become, if the frost was of a protracted character, doubly tender. Covered up in a frozen state, we endeavour to keep it from the fluctuations of any temporary thaw, for doubtless these do more to harm than anything else. Indeed, these maxims will be found to apply to almost any description of plant, which, although somewhat tender, is required to stand out-of-doors altogether; even to our half-hardy shrubs. We have had Celery beds thus covered for several weeks without any harm that we could perceive. It sometimes happens that snow falls before we can get our cover on; this we heed not, but regard the snow as part covering.

LETTUCES.—These are by far more difficult to protect than Celery; they are more tender in a blanched state, being, of course, unprotected with soil. Pits, or frames, are the best preservers, but few can spare them. In the open ground it is a good plan to have plenty of highly-grown *Brown* or *Bath Cos* of full size by the end of October, and then to take them up with good balls of soil, and place them in a close row under the garden walls, touching the latter. Here they may be covered readily with plenty of dry litter, and in very severe weather a board may be placed before the litter, sloping from the wall, to throw off rains and snow. Another plan is to knock up an enclosure, surrounded by slabs, and so constructed as to receive old spare lights, shutters, doors, or anything of wood that will exclude wet; here the Lettuces may be inserted thickly together, with their balls entire, and covered at night and in severe weather. Those who resort to such plans should tie the Lettuces slightly before removing them, as they move safer, and pack more closely together. As soon, however, as they have been taught to avoid elbowing each other, the bands of those wanted to keep some time may be cut; for if blanched, they will, of course, not keep so long. Where huge *Bath Cos* Lettuce are to be met with in the middle of October, they may be both preserved and blanched by inverting a garden pot over them. When it is desirable to attempt to preserve Lettuces in open situations, under ordinary culture, it is no bad plan to place pea stakes amongst them, to sustain mats, which may be thrown over them nightly after the third week in October, or sooner, if the necessities of the season require it. In addition, they may, when slightly frozen, as the winter advances, have litter strewn over the mats, and be kept in a frozen state as long as possible. They will thus endure some eight or ten degrees of frost tolerably well, especially if kept dry.

And here another, and, indeed, complementary, procedure becomes imperatively necessary; and the question of thawing comes in view. Every cook, from Soyer downwards—and there are many grades—knows full well that judicious thawing is not an off-hand proceeding. All other things being equal, I should say that he was the best gardener who thaws his long pent-up and frozen vegetables the slowest. It must never be forgotten that it is a question of light as well as of temperature. Living vegetables, although in a somewhat torpid state, somehow acquire a slight degree of etiolation (or blanching, as the gardeners term it), by being covered up some time; and the plant becomes impatient of sun-light. Every gardener knows that in summer time it is not judicious to expose to sunshine choice plants which have been a week on a journey, closely packed; and just so with vegetables. On the arrival of a thaw, therefore, after days—it may be weeks—of confinement, much caution must be observed: such things should not be uncovered until fairly thawed, and this will commonly be the case a couple of days after every thing around them has been fairly influenced by the altered condition of the air; and, when uncovered, it must be by slight instalments, admitting light cautiously; this

weaning process will, of necessity, occupy some three days.

ENDIVE.—Here we have a dainty subject to manage in the depth of winter; more so even than the Lettuce, for Endive is so liable to a gangrenous rot; is, indeed, more susceptible of damp, especially if in confined foul air; hence it has been a practice with many good gardeners to bury their Endive in dry soil, in order to avoid the vicissitudes of the atmosphere. There are so many ways of preserving Endive, that I need not enlarge on the subject here, any more than to observe, that those who have not pits or frames to plant a winter's stock in, should provide a lot of well-grown, full-hearted plants by the middle of October, taking care to protect them from the early autumn frosts; these may be tied to blanch in succession, bearing in mind that a continued protection is necessary. I have known such placed in a drill, close to the foot of a wall, after the manner of Lettuce, with very good success, and protected in like manner. Of course, those who can place quantities in pits or frames, and give them all the minutiae of free ventilation, with proper protection when necessary, may have Endive all through the winter. There are, however, some secrets in Endive-growing with our market-gardeners, with which I must confess myself not well acquainted; for I always find Endive quoted in our Covent Garden reports in the month of March and April; and this is what not one gardener in a score can boast of: and what is it that this celebrated market cannot boast during the *London season*? But then, the attention of such men is of a highly concentrated character; they have little of the daily fiddle-faddle of the general gardener to distract their minds, the latter being, like Gulliver amongst the Lilliputians, tied down by every hair of his head.

RADISHES.—Those sown in the end of September will be in use all the winter, if protected; and little of this they need. Nothing more is necessary than a straw covering alluded to as in spring crops. These things may be drawn young all the winter, but few care to eat them after November, for, although delicate looking, they eat tough. Those who have a moderate temperature in a frame or greenhouse near the light, might sow a few in boxes, and introduce them in the beginning of November; they would, doubtless, be much more tender.

CRESSES.—Of these, the old *American*, or broad Cress, is the most common, and is perfectly hardy. The *Curl'd* is the finer flavoured by far, as I think; and, indeed, the best Cress in the country, but it is slightly tender; sown on an elevated bed, in a warm situation, in the end of August, fine leaves may be picked through the whole winter. This must be protected, and being impatient of pressure, the covering should not be on it. A little frame-work may be placed over the bed, and mats stretched over it. In addition to the mats, a covering of litter should be added in severe weather.

I may now add, that many other modes of securing winter salads may be found among gardeners, and many of them excellent, so that I by no means would have our readers *confine themselves* to the modes herein laid down, for I do not pretend to a monopoly of ideas on this subject; my desire is rather to direct attention to principles.

R. ERRINGTON.

BEDDING-PLANTS.

WHOEVER owns a Flower-garden ought to have the following notice, from THE COTTAGE GARDENER, put up in some conspicuous place near the garden, and in the potting-shed, as a warning to grey heads not to trust to old experience on taking the duties of a new situation, and to youngsters not to burn their fingers in trying experiments before the landmarks of experience itself are on their foreheads:—

"It can never be affirmed too often, that the first four inches of a flower-bed cannot be made too rich, so that the plants may take to it at once, and start away as if they were forced by bottom-heat; but no sooner than they cover the bed than the roots ought to strike down into a poor soil, so as to give a sudden check to rampant, leafy growth, and throw the whole into flower at once; the lower and more damp the situation, the more is this check needed; but even on the highest and more dry situations it is not safe to make the beds of the same richness throughout."

I have had a good spell at visiting Flower-gardens this autumn, the result of which suggested this notice, which I would earnestly recommend young amateurs and gardeners to copy into their memorandum-books, or at the head of their lists of bedding-plants in the garden book, for I shall take it for granted that no one, now-a-days, who keeps, or cultivates, a garden, however small, is without some garden memorandum-book, in which the names of every plant in the garden is inserted, with blank pages for entering observations on the said plants. When one of these books is filled, or at the end of every year, the book for that year ought to be laid by as carefully as if it contained the only record of the property of the family. Then, when the plans for another year are being considered, and any doubt is entertained of the value, or suitableness, of this or that plant, or mode of going to work, a reference to the old books is more to be depended on than the best suggestions of the oldest and longest heads. I have proved all that myself down to the last chapter in my own experience in service. As soon as the time for slipping the collar was determined on, and long before my successor was thought of, Lady Middleton and I took out the garden books of the previous ten years, at least—from them, and from our extended experience in the meantime, "a consulting book" was made, which has proved to be of some use to her ladyship, and a source of great satisfaction to me. Therefore, I can appeal to past experience with the greater confidence, in urging the adoption of garden memorandum-books on all and every one interested in the progress of our craft and calling.

One thing I regret omitting when I was at Shrubland Park the other day, which is, that I did not ask permission to have a plan of the "Fountain Garden" there, taken, to have it engraved for THE COTTAGE GARDENER, for two reasons—first, as an example of exception to the general rule, which I insist on in laying-out a regular figure or flower-garden, when I say, that you should not so dispose the walks and beds as that company can walk up straight to the centre, like so many soldiers abreast, or "following the rest like sheep." This Fountain Garden is so planted, that the design of the planter cannot be understood until you reach the centre of it, then the sooner and more easily you reach the centre of this garden the sooner you are in the position whence you can best study the most unique and perfect arrangement of flower-garden plants in Europe; and, secondly, to diffuse a knowledge of the system of planting, according to the heights and shades of the principal bedding-plants now in use in this country.

There was a bed by itself, near the "Fountain Garden," about which I need not, however, be so particular, as it is done away with, and a more characteristic bed, for that situation, now occupies the place of it. This was the "Diamond-bed," a medium-sized bed that would make a good bed by itself in any garden where it did not interfere with any arrangement near it. A diamond-bed may be made a tent-bed, as the one in question was in my time, and a comfortable bed it was too; and this is the way to make one like it. Take the ace of diamonds for a pattern, and make each side of the ace twelve or fifteen feet long, but not just so

straight as in the ace of diamonds; let each side curve inwards a few inches in the middle, and that is a diamond-bed, which you may plant with *Tom Thumbs*, or any other bedding-plant whatever. It may, also, have a border all round of some edging-plant, and the thing is complete. To make this into a tent-bed, get a straight pole as thick at the bottom as a giant's wrist, let it taper away to the top, so as to be no thicker there than a stout walking-stick; the length of the pole should be the same as the distance across from one point of the diamond to another, besides the length that goes in the ground. If this pole is painted of a dark green it will last the longer, and look all the better. Now, fix it very firmly in the very centre of the diamond-bed, and fix a smaller and a shorter one in each corner; if the centre pole is just fifteen feet high out of the ground, or not less than twelve feet, the corner posts should be five feet long out of the ground; pass a small cord from the top of each of the four corner posts to the top of the pole, and let the cords be so slack, that they will form a slight festoon in the middle, that is, nearly the shape of a military tent, but to give it a bed character, run a cord from post to post round the four corners, and let it also festoon a little in the centres between the posts; let cords, posts, and pole, be clothed with the most beautiful climbers you can think of, and then, when the bed is in full bloom, with an appropriate fringe next the grass or gravel, take my word for it, there was not a better bed at Olmutz for the Emperors to rest within.

A gardener makes more beds than all the housemaids of all the emperors in the world, but never a bed more like the bed of an emperor than this one, and yet it is not finished. In the centre of each of the four festoons between the corner posts, drive down a small stake, so that there be just length enough to tie the middle of the festoon to it and no more. *Maurandias* are as good as any to plant against these between stakes—they soon get up to the bottom of the festoon cord, and then run along right and left. If one had two old *Cobæas* and two old plants of *Ecceinocarpus* to plant against the four corner posts, with branches enough to cover the side festoons, and the festoons to the top of the centre pole at once, how lucky it would be. It is desirable to fasten down the side festoons by the stakes with the *Maurandias*, else the wind might dash them against the plants in the bed, if these were high enough, and that would be as bad as disturbing a man in a real tent-bed; while the festoons over the bed might play as the wind listed, without doing harm to themselves or to any other part of the furniture. Two *Clematis montana*, and two sweet-scented *Clematis* (*C. flammula*) are among the best hardy climbers to plant against the four corner posts. When once they were big enough to cover all the cords, they could be taken up at the end of every autumn, and planted in their places the same day; and this annual transplanting would just keep them in the right degree of strength that they would not look too heavy, and the bed be overdone with furniture.

The *C. montana* would give a snow-white covering from May till the sweet-scented *Clematis* was ready to put on its equally white but less large flowers; and when all was over, the white beards on the seed-pods of the latter would still be in the desired tint, and look airy and feathery besides. On the approach of winter, poles, posts, stakes, and cords, might be taken down, and put by in a dry place, and temporary stakes from the Dahlias be put up all round the diamond, to tie the climbers to till next March or April, or at whatever time they began to grow freely. After a hard, close pruning, to *flamula* only, for the *montana* must not be pruned much in winter, as it flowers, in May, on the long shoots of last summer (but it should be pruned as soon as it was out of flower), these long shoots would

need to be cut right close, to make room for another lot for flowering the following year. Now, with the exception of the *montana*, and without mentioning one-half of the bed plants and climbers, that was exactly the way the "Diamond-bed," at Shrubland Park, was managed for nine or ten years in succession; and every one who saw it admired it.

No doubt, before all the improvements are brought to a close there, there will be an improved diamond-bed in some corner or another. It is a sort of bed that must have a place for itself, as it does not suit or harmonise with every-day beds. At all events, I trust this account of it will keep it from going out of fashion, or rather bring tent-beds and diamond-beds into repute. If a good-sized tent-bed was made on grass, planted with *Punch*, or very old large plants of *Tom Thumb*, with an edging of the *Frosted Silver-plant* all round, and the climbers with white flowers, such as white *Maurandias*, or white *Convolvulus*, and the white *Clematis*, or Virgin's Bower,—what virgin, or Empress, could desire a more comfortable bed, in troublesome times like these, when nothing else goes up or down but tales and rumours of war.

I saw a large patch of a kind of Cat-mint (*Nepeta teucrioides*) in the new dell ground at Shrubland Park, with which I was particularly pleased as a rock plant, a mass plant in wilderness grounds, or as a neutral bed in a first-rate flower-garden, as I have since seen it used with good effect, and as a bed in which to plant standards of gayer plants, after the manner lately described by Mr. Fish; for all such uses, this plant, though neither new or gay in itself, is very well suited; indeed, it is a native of dry places in the south of Europe, and as hardy as common Thyme, and not unlike some variegated Thyme at a distance. It is, also, a bee-flower of the first order, reminding one of school-boy days, when we all ran after the first bee of the season, in full chorus of "I C U, O U B C B" (I see you, O you busy bee). I have seen some excellent examples of the kinds of beds planted with standards and specimen plants to rise above the general height of some other plants with which the bed was made up, and I think the effect was heightened when the low plants were of a neutral character; but that may be a prejudice—I never studied the subject much.

The *Cassia corymbosa*, mentioned by Mr. Fish, was the last plant I tried against the conservatory wall, at Shrubland Park, where I found it, the other day, in full bloom. By-the-by, *Tacsonia manicata*, which I grafted, or rather inarched, on *molissima*, against this wall, flowered last season. This is the very finest flower of all the half-hardy climbers; it only requires just the frost to be kept from it to get enormous head-room to spend itself in growth; then a sudden check by root-pruning, about the middle of May; and in the autumn it would be in full bloom, with dark crimson flowers, which no one, except a botanist, could tell from a real Passion flower, there being scarcely a semblance of a tube, as in some other species of this doubtful genus. This plant was only six inches high in May 1850, when it was inarched into an old plant of *molissima*, and in the following November, there were several flower buds on it, but it was too late for them then to open; and there were no signs of any blossoms this autumn, the old plant being obliged to be confined to a smaller space than it ought to be allowed. *Tacsonia pinnatistipula* is also inarched on the same plant, and not nearly so full in bloom as *molissima* itself, which proves it to be the first flowering of the genus out-of-doors; for it is only in the winter that this wall is covered with glass. The *Cloth of Gold* Rose and the *Sofrano* do not appear to flower well on this wall; while here, about Kingston, both of them do very well indeed in most places. The best specimen-plant for a mixed bed, that I saw on the border of this wall, was *Pentste-*

mon cordifolius in full bloom. There is a fine new scarlet *Pentstemon*, called *baccaridifolia*, in Mr. Jackson's nursery here, which, I believe, was introduced by the Horticultural Society, and they told me it was a fine thing.

I saw several patches of the best of all blue flowers for a moderate bed, the Chinese Larkspur—*Delphinium sinense*. Half the world believe this to be a biennial, or little better than an annual; but it is as much of a perennial as *Salvia patens*; as good a blue, and lasts as long in flower, the plant seldom rising more than eighteen inches high; just the right thing for a nice blue bed, as we have no other blue of any account of that size. *Salvia chamaedrioides* is too straggling, and the bloom not striking; while *Cineraria amelloides*, looks too old-fashioned, or common, for a first-rate blue bedder; in short, we have nothing that way half so good as this *Delphinium*. One could buy a good large packet of seeds of it in London for sixpence, and out of that several first-rate plants could be picked out the first season; then, by saving the roots of these just as we do those of the *Salvia patens*, and getting them to seed the following summer, three-fourths of the seedlings would be as prime as the parents; otherwise, this Larkspur runs away into as many varieties as the common branching Larkspur, and shop seeds seldom produce more than from five to ten per cent. of really good blue flowers. There is no flower we are more often asked about than a good blue flower for a bed, and here is the very fellow.

I had much more to say about *Verbenas* in my last article on Shrubland Park, but I have seen more of them since, and now I am gathering a long story about them for a particular friend, and I shall tell the story in my own way shortly.

I could go on with this kind of gossip for ever so long, but too much gossip is as bad as too much of a good thing, and I shall cut it after a word or two about *Standard Geraniums*, or rather pillar Geraniums. Those who recollect that I said that *Queen Victoria* fancy Geraniums could be grown to five feet high in about eighteen months, and shook their heads at the assertion, may now, without shaking their faith, believe me, when I state that pillars, or standards, which were made in 1847, 1848, and 1849, are now as healthy, and produce as many flowers, as any of the "squat" plants, as Mr. Marnock once called the florists' mode of training them. Besides the comfort of such a proof, this is just the right time to begin to make a pillar Geranium of any kind, to be from three to five feet high next June, according to kind; or a *Fuchsia* pillar, to be from five to fifteen feet high, next July, according to sort; and a bush of the beautiful *Indigofera decora*, to be a foot or a yard through next May, according to present size. All that is required for any of these things is a resolution to begin the job. When an Englishman begins anything, he is sure to succeed with it in the long run. An Irishman would run the shoes off his feet ere he would give up a race; and a Scot would try again and again until he did do it. Place young, promising Geraniums, with only one leader a-piece, in a stove, and treat them just as stove-plants till they show for bloom; 80° of steady bottom-heat would greatly assist them.

D. BEATON.

PITS AND SMALL HOUSES, VERSUS LARGE ONES.

(Continued from page 9.)

SEVERAL remarks have reached me, in reference to the last article, that may as well be alluded to before going further.

1st. "If it be of importance, in the case of pits and houses, to admit air near the base line, how is

it, that you, and other gardeners, do not act more upon the principle; as you seldom seem to have any such ventilators as you mention?" Few gardeners that have seen or travelled much will think these low ventilators of no importance. I should not be acting right, did I recommend one system I *made* to answer, when I had proved that another mode would answer with less trouble and risk. Amateurs should bear in mind, that there are but few gentlemen's gardeners that can chop and change as to them seems fit. There are no drawbacks as to what is expected from a garden, quite the reverse; but taken as a rule, there are but few extras allowed in the way of changes and improvements. In building, therefore, as well as many other things, amateurs would act wisely in taking the advice of a good gardener in the neighbourhood, instead of implicitly building and working as he had done. If you would prefer imitating, instead of advising, as a general rule, you will act more safely in going to a prosperous commercial establishment, rather than a private one. The latter, as a rule, must make the most of circumstances; the former will make all circumstances give way to ultimate advantage and profit.

2nd. "My bricklayer says, that a flue built in a nine-inch wall, of the size proposed, will neither stand nor draw, and will get choke full directly." Get the furnace-bars fifteen or eighteen inches below the level of the bottom of the flue, and it will draw fast enough. With common fuel, the very quickness of the draught will prevent choking, though, of course, it will require cleaning at times. I have previously described such a small flue running beneath the paved floor of a small house that answers admirably. If you had any doubts, however, put two bricks on edge, instead of one, and then you would have a flue, four inches by nine, amply sufficient for anything. The weight above will keep the wall strong enough, if you do not strike it violently opposite the flue. I mentioned this flue in the wall, not as the best position, but as involving the greatest economy of space and materials in the circumstances. I have worked such many years ago.

3rd. "I should like such a flue amazingly, but if I go deeper than three feet for a stock-hole, I shall come to water, and even then a place that would hold a store of coals, arched, &c., would cost nearly as much as the bricks of the pit." Raise your pit more above ground, and then there will be no necessity for a deep stock-hole, and thus you would escape, alike the presence of water, and the necessity of sinking a well or drain to take it away. But what necessity is there for having a place like a huge coal-cellar for such a pit? A bushel or half-a-bushel of fuel would be enough at a time; and a small place, some four feet by three, would be quite large enough. A flap-door over it would keep it dry. A little concreting or tarring of the ground would render it more so. Large or arched stock-holes for such work, is as useless as throwing money in the Thames.

4th. "I cannot see how surrounding the flued part of such a wall with earth, with the exception of a cavity all round, is to prevent the flue heating the cavity and then the earth, instead of being directed principally to the interior; and, therefore, I propose following out your suggestions as to the cavity; but having several holes to be opened or shut at pleasure, communicating with the open air, and then have several pipes, taken from this cavity, through the wall, above the flue into the pit, so that when I open the outside holes there will not only be fresh air admitted, but it will be dried and heated before it gets into the pit, and thus I shall gain the advantage of the heat of the outside part of the flue." I have no objection whatever to the plan. Of course, on the plan proposed, whenever you allow the external air into the cavity, you do away with its *non-conducting* heat property. But you will gain a great advantage in

dull, cold weather, in thus being able to send a portion of fresh air into the pit; and a very small lifting of the sashes behind will be sufficient to put the air in motion. In fact, if your sashes are not glazed at the laps, there will be little necessity, in muggy weather, to lift the sashes at all. You have thoroughly got the right end of the admission-of-air theory in all cases of forcing, &c.; and when, even in cold pits, there is a great difference between the internal and external atmosphere. In very particular cases, gardeners are now anxious to have the means of heating cold air before it is admitted among delicate plants in a hothouse, by bringing that air previously in contact with a heating medium. Wanting these means, air, at such periods, is given, with great care, only at the highest part of the house, and then chiefly after the reflection of the sun on the glass has rarified the air contiguous to it.

Though I thus approve of your plan, it is no less true, that an air-tight cavity will very greatly retard the conduction of heat. Confined air, in fact, is considered one of the best non-conductors. Hence, a hollow wall, air-tight on both sides, will be less influenced by temperature than a solid wall of the same thickness. In such a case, when the inside wall is heated by the sun, or artificial means, it is not cooled by transmitting its heat easily to the outside wall. And on the contrary, when that outside wall is cooled down by frost, it would be long before the inside wall was affected through that medium. Many years ago, I made some rough experiments to satisfy myself on this subject. In the case of walls, hollow, but air-tight, and in that of others, hollow, but the holes filled with non-conducting material, as sawdust and charcoal, I could perceive little or no difference; but both were different as respects heat and cold when covered, when contrasted with a solid wall. I may mention another trifling experiment, as showing my young friends, as well as a large one, the non-conducting properties of confined air. Two small tin jugs were taken possession of. An old one, a size larger, was cut, so that the bottom of one stood inside the bottom of this old one, leaving a space of half-an-inch between them. The cut part of the old jug that joined the side of the whole one was securely luted or soldered, to prevent any access of air; both vessels, filled with water, were set on red embers without flame. Supposing, that in these railing days, you were one of these unfortunates that could not clean yourself in a morning without hot-water, and had to wait contentedly until this double-bottomed vessel contained liquid hot enough; would you not be worthy of being enshrined along with *Patience* on a monument? Even with the conduction of heat rising by the sides of the vessel, which could not be prevented, the single-bottomed vessel, in these circumstances, could be boiled several times before the other was well heated, and the balance between them only got restored when, after several trials, the lower bottom of the double-bottomed one got a hole burned in it. I think I mentioned, some time ago, another simple evidence of the same fact, but will repeat it here, as these little matters often become of considerable importance. I was getting some zinc pans, for evaporation, placed on some round four-inch pipes, the bottom of the pans being semi-circular to clasp the pipe. The mechanic who made them was fixing them by placing a thin layer of red lead along the inner edges of the sides and ends of the pans, and then pressing them firmly down on the pipes. It struck me that thus there would be a cavity between the pipe and the pan, in proportion to the thickness of the red lead used in fixing them. The workman was well aware of the properties of enclosed air, but he could not think it could tell in such a minute affair as this. There is nothing, however, like practical proof. Other pans had a slight coating of red lead all over the

bottom, and were then pressed down firm on the pipes. When the pipes were heated, the putting your hand inside the pans would enable you to tell which was solid and which was hollow. When the pans were filled with water, the solid-bedded ones evaporated themselves to dryness three and four times for the hollow ones doing it once. I, and many more, place such pans and earthenware vessels on pipes and flues merely in a moveable state; but we are well aware that evaporation does not proceed in an equal ratio it would do when joined without cavity to the heating medium. Confined air, therefore, is a first-rate non-conductor of heat—a fact, which, neither in gardening nor social economics, has taken that place which its importance demands as a security against extremes either of heat or of cold. Now to proceed.

3rd. "I have two pieces of ground, about twenty feet wide, some forty feet long; one lying east and west, the other north and south. I wish to devote that space to a pit or pits, to keep plants, propagate plants, and force them a little in spring, with little or no fire-heat, with such assistance as the refuse of the garden, the droppings of a cow, and the famous "gardener's pony" can afford, with the addition of some trusses of bad hay to the usual covering in bad weather, as fuel has to be brought a great distance. Now, whether I have a pit or pits, I must have room out of this space for a dry, comfortable path all round them, for walking on, examining the interior, taking off sashes, &c. Bricks are far to drive; I wish to cover some ten or twelve feet in width with flags, and I wish to do it as economically as possible. As respects future covering, &c., I had thought of a double-roofed pit, what you call span-roofed, but then I see that you, and Mr. B., and Mr. C., and Mr. F., and Mr. S., have nothing of the kind, only five or six feet wide pits, each, of course, with its high brick wall at back. Now do solve my difficulty?" The above is the purport of several communications. The first reply is, not to be guided by what *we* may have done. Where utility, and first expense in covering a certain space are the objects, the span-roof, even in pits, will take the place of the one-sided sloping-roof, because, supposing a wide span-roofed pit to hold the same amount of material as the narrow pits, the expense of the two high back walls is nearly dispensed with; you having merely, instead, a few supports from the centre, and a ridge board, &c., for the rafters and sashes to work against. Bear in mind, however, that no one system of building or enclosing with glass will present you with every advantage. For instance, lately, double glass walls, enclosing but a narrow space, were to be the panacea for most of the evils attendant upon half-hardy plants and fruits; were to finish the lean-to-shed-like-houses, and do away with the necessity for covering, &c. Now, without any practical working of the buildings in question, yet reasoning from analogy, and leaving out of view the expense of such houses—itsself a very great consideration for the space they occupy—we could not but conclude that the chief defence they exerted against cold was owing solely to the *dryness* and *stillness* of the air within; and that instead of being independent of heating, or covering, in severe weather, they were much more dependent upon one, or both means, than a common lean-to narrow house; inasmuch as they contained but little amount of air, and nothing of an opaque body for obtaining and then giving out heat, as the back of a house, or pit, exposed to the sun during the day, would continue to do until the wall became as cold as the air surrounding it. Hence, when we build a span-roofed-house for plants, we do so, first, that our plants may have light all round them, and not be drawn to one side merely; and then, again, because, if we obtained the same amount of light from the same quantity of glass on the lean-to system, we should be obliged to

build a high wall for its back, instead of a short one all round for a span-roof; but we never think of managing such a span-roofed-house without more of a heating or protecting power than would be necessary for the same quantity of glass stretched out along the side of a wall, merely because the wall is both an absorber and a radiator of heat. Hence it is that established gardeners, who are getting the chance, as at Woburn and elsewhere, whether for fruit or conservative walls, are adopting the model of the narrow upright houses at Trentham.

Keeping all this in view, not forgetting what was said at page 8, about shallow pits, and deep pits, and well aware that deep or shallow, more care must be exercised against sudden extremes in a wide span-roofed pit than in the same amount of glass, with its upper end against a wall; still, in the circumstances and premises alluded to, as to ground, bricks, space, expenses, &c., I would decide upon a span-roofed pit, and on the ground running north and south, that is, with the two sides facing east and west, or nearly so, and the two ends north and south; the latter being of glass, and the former either of glass or an opaque substance. Supposing your pit to be thirteen feet, outside measure, you will then have a path of three-and-a-half feet all round it, which, in general, will be quite sufficient. The sashes may slide up and down in the usual way. In extreme cases, a sash would require to be taken off when anything particular was doing. For all common purposes, such as watering, &c., each sash as come to, could be held upright, by tilting it with a moveable triangle, formed of two pieces of wood long enough, joined at an acute angle, and an iron point inserted there to suit a hole in the lower part of the sash so as to keep it steady. A cross-bar would keep the base of the two pieces from spreading. In the case of such a pit, where covering is to be the chief means employed for counteracting cold, the ridge should not be more than from two-and-a-half feet to three-and-a-half feet above, though if shutters are adopted for covering, at night rise six inches more, if particularly desired. Supposing that the side walls are from nine to twelve inches above the ground level, from two-and-a-half to two-and-three-quarter feet high at the ridge would be sufficient for keeping half-hardy plants, and three feet would be a security from tender things being injured by the damp clinging to the glass. Four feet, in such a case, would only be required when growing plants or fruits that needed a good amount of sunlight in spring and autumn. Provided there was nothing to obstruct the rays, sinking the wall in front six inches would just have the same effect as raising it behind as much. I have frequently covered long sashes when their upper end was more than six feet from the ground, but such a mode can be adopted in a span-roofed pit only when you had a good heating apparatus to fall back upon.

"Then what shall I cover such a pit with—mats? I see you use them." No! for one twelvemonth I question if they are not the most expensive; if you take any half-dozen of years they will beat anything and everything for dearthness. Those, however, who must give an annual sum, and nothing more, will be forced to continue to give commerce to the Russians. In such a case as your's you could do nothing with them except fastened to a frame, the size of a light, and with laths or rods on the light, for the protecting frame to slide up and down upon. Asphaltfelt, Frigidomo, strong waterproof, or tared calico, would all beat mats, because waterproof; and dryness on the glass are great things. Some, for such places, have strong cloth on rollers, or a canvass covering, as if for a light waggon; but the evil of all these latter is, that in bad weather they will freeze when off, be torn in pulling them out, or with a hard piece give the glass a whip, to see which was hardest. Everything considered, had I such a place

of my own, and could I stand the first cost, which would be between 6s. and 7s. for a shutter some six-and-a-half feet by four, I would have as many shutters of the best deal, three-quarter-inch thick, and well painted, as would cover the whole of the glass; and at the end of a dozen years, with good care, they would be serviceable still. Unless in extra severe weather you would want nothing else; and even when King Frost came in all his powers, a little litter at the ends and joins of the frames, and round the walls, would be sufficient, though, if there was no artificial heat whatever at that cold season, a little of the *rough hay* thrown all over would make the inmates more safe. Every lover of neatness would have nothing to do with any protection for glass, unless what was fixed to a roller, and flexible; or, if opaque and heavy, was not only waterproof, but fixed to a frame. It will have been seen, that in proportion to its depth, such a pit may be used for different purposes in summer. A set of queries how best to keep plants, and, also force various plants in such a structure, with the help of a hot-water pipe, must be answered at a future opportunity.

R. FISH.

JOTTINGS BY THE WAY.

(Continued from page 10.)

HOOLE HOUSE, Chester, the residence of Lady Broughton.—Mr. Major, the landscape-gardener, whose work on the art of laying-out and designing gardens was lately reviewed in *THE COTTAGE GARDENER*, has called my attention to the comparative neglect to which herbaceous plants have been subjected of late years. Had my good old friend been with me when I visited Hoole House, he would have seen Lady Broughton is one of the few who still adhere to the old system of mixed flower-beds. On the garden lawn, in front of the house, there are a considerable number of circular beds planted with the best herbaceous plants that can be procured, subject to a rule of not exceeding from six inches to eighteen inches high. They are kept thus low for the purpose, that they may not conceal the grand, Alpine rock scenery beyond them. Lady Broughton resides constantly at Hoole House, and, therefore, requires a constant succession of bloom in her flower-beds, and so contrives, by judicious management of the mixed flowers, that some of them are in bloom for at least nine months in the year. The bedding-out system would not answer this purpose so well, for there must be a season of growth, as well as of bloom; and whilst they are growing, of course there would be no flowers. Where families only reside at their country seats during the summer and autumn months, the massing system, so ably advocated by my friend, Mr. Beaton, is the most effective, and quite proper to be adopted, but even in such cases, a border or bed or two might be devoted with the best effect to the mixed system. Mr. Errington has very lately taken up the cudgels in their favour, and I think with good effect. On some future occasion I will do my best to second his efforts, and try to rescue a few more of these beautiful plants from the oblivion to which the bedding-out system seems to have partially consigned them.

The Alpincry is the grand characteristic of this place. Perhaps there is not in Great Britain a finer example of a successful imitation of Alpine scenery. I have never seen the Swiss Mountains, but I am assured, a considerable portion of the rockwork here, is, though of course on a diminutive scale, an exact imitation of Mount Blanc, and the surrounding scenery. The imitation is carried out by means of white stones so placed as to look like glaciers. In the crevice of the rocks there are planted spiry-formed shrubs or trees, such as the Irish and common Yew, Spruce Firs, upright Junipers, Deodars, &c.,

all trained to form pyramidal spires. This arrangement has a peculiar and effective appearance. Rare Alpine plants are quite domiciliated in the crevices of the rocks, where many of them scatter their seeds, and come up abundantly. When I called, I noticed the following in flower:—

Androsacea lanuginosa, and *A. villosa*; *Epimedium grandiflorum*; *Ethionema membranaceum*; *Gypsophila prostrata*; and another species collected by Lady Broughton, on the Alps, apparently a new species; *Campanula punila*, and its white variety, spreading over a large space; *Erinus alpinus*, several varieties in colour; *Sedum Ewersii*, and *S. Sieboldii*; *Erpetion reniforme*; *Myosotis Azorica*, in shady places. Many species of dwarf *Lobelias*, *Saxifragas*, &c.

This rockwork occupies an irregular space some fifty or sixty yards long, forming a kind of semi-circle, enclosing nearly the space of the lawn occupied with the circular flower-beds. I think the highest point cannot be much less than thirty feet. It is well worthy of inspection. A botanist would be delighted with the number of rare, interesting plants to be seen here on the Alpincry.

There are three greenhouses. One devoted to the *Camellia*; another to the finest and choicest *Geraniums*; and the other, a kind of entrance hall, to a mixture of various plants constantly in flower, supplied from the houses in the kitchen-garden. In this house I noticed the White Horse-shoe-leaved *Geranium*, *Boule de Nige*; also, *Emily Field*, a blush *Geranium*, with very distinct foliage, deeply fringed at the edge; and a pink variety, called the *Kingsbury Pet*. These are all somewhat new, but very desirable, both as pot-plants, and for bedding-out in masses.

This was the last place I called at on my journey. On my way home by the North Western Railway, I could not help noticing the barren banks on each side wherever there was a deep cutting, and thought what a pity these banks are not clothed with some of the more common Alpine plants, Ferns, &c. In some few places the wild *Clematis* had found a footing, its light seeds, no doubt, carried thither by the wind. Where clay formed the bank, I noted the wild *Coltsfoot* flourished best. In lime-stone rocks, here and there, the great yellow *Snapdragon* was in bloom; also the wild *Scabious*, wild *Thyme*, and the rock Rose, *Helianthemum*. In better soils, the wild common *Broom* was blossoming freely; also the *Furze*, "unprofitably gay." Still there were many a large space of barren spots that looked anything but agreeable. How I longed to have the privilege of scattering a few seeds of *Wall-flowers*, some *Dianthus*, and other common things, that would take away the disagreeable nakedness of those unsightly banks. The various railway companies throughout Great Britain, might, for a few pounds, thus render their railways much more attractive, and with a useful effect too. These plants would help to prevent the banks from shattering downwards; a circumstance that is frequently happening, and subjecting them to the expense of constant repair. In some few places these banks are very neatly planted in beds with choice shrubs. Such may be seen on both sides of the slopes at the Watford and Tring Stations, on the line of rail above-mentioned.

T. APPELEY.

THE ANEMONE.

If splendid colours, long season of blooming, and easy culture, are qualities desirable in a plant, the *Anemone*, with its varied, rich-coloured blossoms, certainly deserves a place in every garden, from that of the cottage to that of the royal palace. It blooms early in summer, and with judicious management, late in the

autumn. As now is the time to plant this flower, I think a few remarks on its culture will be opportune, and, I trust, useful to many of the readers of THE COTTAGE GARDENER.

The Anemone that is generally cultivated, is the one that botanists designate by the scientific name of *Anemone coronaria*, the crown or poppy Anemone. It is this species that produces the greatest varieties of colours, both in a single and double state. There is, however, another species that florists hold in great estimation, and it is named the *Anemone hortensis*, the Garden or Star Anemone, the flowers of which are exceedingly beautiful, but they do not bloom for so long a season, and scarcely ever in the later months of the year. Of this species, I believe, there is only one variety that produces double flowers, and it is the double-red.

Properties of a fine Double Anemone.—The blossom should be from two-and-a-half to three inches diameter, consisting of an outside row of stout, large, well-rounded petals, which florists call the guard leaves. These should spread out horizontally to the edges, which latter should turn upwards slightly, so as to form a saucer-like appearance. Within these guard-leaves, and at a little distance from the edges, there should be such a number of long, small petals, longest at the bottom, and gradually shortening to the centre, so as to form a half ball-like appearance. This form is so well-known, that when a similar one takes place in any other flower, it is described by the name *Anemone-flora*, and is found in the Camellia and Pæony. Self-coloured flowers should have the colour clear, bright, and distinct, whether it be blue, crimson, or scarlet. If variegated, that is, the interior and exterior petals striped, the colours should be very distinct, for even cloudiness, or irregular broken stripes, are objectionable. Lastly, the stem should be elastic, yet stout enough to bear the flower erect, and should be, at least, from eight to nine inches high.

Soil and Situation.—The Anemone requires a pure loamy soil, well-mixed with sand. Such a soil I have sometimes found on the sides of rivers naturally mixed with the sand. No doubt such soil is formed by the deposit from the water, when at some former time it overflowed its banks. In this sandy loam the roots should be planted, but when extra fine blooms for exhibition are wanted, a little more pains must be bestowed in forming the bed. First choose a situation that is open, but sheltered from violent winds, or strong twisting currents of air, which often prevail near buildings of different angles. Having fixed upon the site of the bed, then dig out the soil a foot or more, according to the situation being high or low. If high, it may be dug out three or four inches deeper; but if low and wet, a foot will be sufficient. Mix the soil with sand if it requires it, and fill in the bed again to within six inches of the level of the surface; then level it, and lay on it a thin covering of thoroughly decomposed hot-bed, or cow's dung; the latter is to be preferred. Mix this well with the soil below. Upon this mixed, enriched soil, place as much of the pure sandy loam as will raise the bed an inch or two above the walk. No dung must be among this top stratum of soil, because dung causes the peculiar disease called mould to attack the bulbs that come in contact with it. The real roots, or feeders, will soon find the rich soil below. The bed is then ready for

Planting.—One very commendable quality in the Anemone is that it is harder than the Ranunculus, and, consequently, can be planted in the autumn, to bloom early in the spring. The best season is about the middle of October to the first week in November, because then the bulbs form roots before the severe frost sets in. This is of importance, for if roots are not made before that takes place, the tubers are liable to be destroyed by the frost. Should the planting be unavoidably delayed,

through continued wet weather, or any other cause, the bed must then be covered with fern or straw, to prevent their being injured. Choose, if possible, a time when the soil is moderately dry, and the day fine. Draw drills two inches deep across the bed, five or six inches apart, and plant the tubers five inches apart in the rows. For choice varieties, a thin layer of sand scattered under and around each tuber will be useful. As soon as the bed is planted, cover the tubers with sandy loam from a basket or wheelbarrow. This is much preferable to levelling the drills in with a rake, because then the tubers will be regularly covered a right depth. Take care, however, that the tubers are placed the right side up. This may be easily done by observing the side that has the old small fibres on it. That side should be placed next to the bottom of the drill. When all are planted and covered up the right depth (two inches) then level the surface with a garden rake, and if there are no permanent edgings, trim off the edges of the bed with the spade, and rake the walks.

After-management.—Should it be necessary to protect the plants with any kind of covering, and the weather should prove mild, the covering should be removed, and replaced on the appearance, or likelihood, of a return of frost, and when the fine weather of spring sets in remove the shelter entirely. Should the weather prove droughty in spring, a thorough watering, now and then, will encourage a free growth and fine bloom. And the bloom would be greatly prolonged if an awning of canvass, or even garden mats, be stretched over the bed, upon a frame of hoops, to shelter the flowers from the sun. This covering would also be useful as a protection from high winds, or heavy splashing rains. As a matter of course, all weeds must be plucked up as they appear, and a diligent watch kept to prevent snails and slugs preying upon the plants. T. APPLEBY.

(To be continued.)

STOVE FERNS.

(Continued from page 26.)

ADIANTUM TENERUM (Tender).—From the West Indies. Is a very beautiful Fern, easily propagated by dividing the creeping rhizoma or root-stock. It is ever-green, growing two feet high, with leaf-stems four times pinnated or branched; each leaf is rhomboidal, and of beautiful bright green.

A. TRAPEZIFORME (Trapezium-leaved).—A native of the West Indies. When this Fern is well-grown, I know of none more ornamental. To effect this, it should be frequently potted, and if some small charcoal is mixed with the compost it will thrive much better. It may be increased by division, as well as by seeds. Its leaves are large, and the seed-vessels are beautifully arranged on the edges of the leaves; stems black and shining. It ought to be in every collection however small.

ALSOPHILA.—A genus of large Ferns almost approaching to arborescence or tree-like. Where there is plenty of room, they are well worthy of cultivation, but in small collections their culture should not be attempted. They may be distinguished by their sori or seed-cases being round, and placed regularly about half-way between the edge of the leaf and the mid-rib, generally, but not always, at the end of the veins which branch out at regular intervals from the mid-rib. In cultivation they require plenty of pot room.

A. ARTICULATA (Jointed).—A noble Fern from Jamaica, growing five feet high, with fronds six or eight feet long. They are bipinnate, jointed, or articulated, with rachis or stem, which is covered with spines and scales.

A. FEROX (Rough or Prickly).—A West Indian Fern.

This may be known at once by the thorny prickles on the main stem, the branching-stems, and the leaf-stems. It is a large-growing species; the leaves are terminal on a stout stem, sometimes branched, and five feet high in this country, though it, of course, grows much higher in its shady, native localities.

A. PRUNATA (Frosted-leaved).—From Brazil. This is a singular-looking species; the leaves and stems are covered with soft, woolly-looking hairs, giving the plant an appearance like hoar frost, hence its specific name. It is thrice, and sometimes four times pinnated, with the fronds from four to six feet long.

A. VILLOSA (Shaggy).—A South American Fern. Distinguished from the preceding species by the stems and fronds being covered all over with long, shaggy hair-like processes. The fronds also are somewhat longer, being often seven feet in length, though the main stem that supports the fronds is low.

ANETIUM CITRIFOLIUM (Citron-leaved).—A genus of West Indian Ferns approaching *Acrostichum*, from which it may be distinguished at once by the seed-cases being irregularly scattered all over the under surface of the leaves. There is only one species in cultivation. Its fronds are simple, that is, not pinnated, and the root-stem creeping. By this it may be increased. Divide the root-stock in two or three lengths, pot them, and place them in peat under a hand-light, and each division will send forth a new leaf, originated from incipient buds.

ANTOPHYUM LANCEOLATUM (Spear-head leaved).—A West Indian, dwarf, simple-leaved fern; curious from the fact that the seed vessels are within the skin or outer covering of the frond. It is allied to *Hemionitis*, but from this circumstance is separate from it. The leaves grow a foot long, and are of a narrow lance-shape, and thickly set on a short root-stock, or rhizoma. It is a very curious, interesting, dwarf fern, and worthy of general cultivation.

ASPIDIUM.—From *aspidon*, a little shield, the seed cases being covered with a shield or protecting skin. The genus *Aspidium* was formerly a very large one, but modern botanists have reduced the number of species to two; the rest are divided into at least ten genera.

A. TRIFOLIATUM (Three-leaved).—A broad-leaved, somewhat dwarf, West Indian species. The seed-cases are regularly distributed over the middle part of the fertile fronds, and are exceedingly beautiful. Not always trifoliate, for there are generally two pairs of pinnæ, besides the terminal one, on account of its being dwarf, with fine, large leaves, and elegant veining, with its beautiful shield-like sori or seed-cases. This species is very desirable.

A. MACROPHYLLUM (Broad-leaved).—A West Indian, noble, strong-growing Fern, with pinnated fronds nearly three feet long. Seed-cases kidney-shaped, and very regularly distributed on each side of the mid-rib of the leaf. The foliage is large, and of a pale green.

ASPENIUM.—A large assemblage of beautiful Ferns are arranged under this name. They may be known by examining the arrangement of the seed-cases. These are placed on the upper side of the veins running in lines from the mid-rib of each leaf. The fronds are various, from a simple form to pinnate, bipinnate, and tripinnate, but the seed-cases are uniformly long, narrow, and simple.

A. AURITUM (Eared).—A West Indian, pinnated Fern, with the pinnæ twice parted or bipartite. The fronds are produced at the end of the rhizoma.

A. BRAZILIENSIS (Brazilian).—The fronds of this South American *Asplenium*, are simple, a rare occurrence in this genus. It is sometimes called "the Bird's-nest Fern," from its fronds being set circularly round the root-stock. They are frequently, in cultivation, seen from three to four feet long.

A. BRACHYOPTERUM (Channel-winged).—This is a

beautiful, low-growing, rare Fern, from Sierra Leone. The fronds spread horizontally, much in the same way as an *Adiantum*, growing only eight or nine inches high.

A. COMPTUNI (Rooting).—A very beautiful, dark-green, Jamaica Fern, rather rare, but may be increased readily by the rooting knobs at the end of each full-grown frond. They are pinnate, growing a foot-and-a-half high, terminal, that is, growing in clusters on the top of the rhizoma.

A. DIVERSIFOLIUM (Various leaved).—Though this singular Fern will exist in a greenhouse, yet it thrives much better in a moderately-heated stove. The fronds vary much; some are narrow-leaved and fertile; others are broader-leaved and barren, whilst others are partially fertile and partly barren. I once had a plant with a rather long rhizoma, and at each of the joints of the root-stock there sprung up a plant evidently a sucker. I allowed them to grow till they produced roots, and then carefully detached them from the parent plant, potted them in small pots, and placed them under a handlight where they soon made fresh roots and growth, thus giving me a good stock of this rather rare elegantly-curious Fern.

T. APPLEBY.

(To be continued.)

A FEW WORDS ON MUSHROOMS.

NOTWITHSTANDING the many treatises we have had on the culture of this singular production, it is evident that its success is still in some degree enveloped in mystery; for it not unfrequently happens that the best arranged plans, and good materials, carefully put together in the most approved way, are failures; while a rough made-up bed, or some other obscure corner, sends up Mushrooms in abundance, almost without care, attention, or protection of any kind. Now, though these are extreme cases, yet it sometimes happens that such is the result. A cryptogamous plant, like the Mushroom, deriving its existence from other sources than the usual mode of propagation by seed, or cuttings, by which other cultivated plants are increased, we need not wonder if our efforts should occasionally be unsuccessful, when we are really so little acquainted with the nature and properties of the production we are attempting to cultivate; yet much may be done, and much is done, to secure a crop, by aiding our endeavours with all the agents that are likely to assist in that way.

As Mushrooms, in January, are more of a luxury than the same in September, it behoves the cultivator to lose no time to get ready the materials necessary for a bed; good stable dung is best, added to which may be some good dried cow-dung from a pasture field, and that of sheep, when it can be swept up, is also of much value. These ingredients, by being mixed and thrown in a heap, speedily heat, and when so, must be often turned to prevent that overheating which is all but fatal to the Mushroom thriving afterwards. As this is one of the most important points to be observed, I beg particularly to call attention to it, in order that the inexperienced may avoid the disappointment which the use of dung that has lain some time in a heap, and got heated until it is as white as chalk, is sure to give; and dung speedily does become as I have described, very often being so before it is removed from the stable dung-hill, when the latter is capacious enough to hold a quantity that will heat, and thus lie for a fortnight or so. The dung for Mushroom-culture ought to be taken from the heap every day, as it is made, and laid in a shed or some other dry place, not too thick, yet not in such a way as to get perfectly dry, for such would be robbing the dung of the juices most necessary to its fermenting, and perhaps fertilizing, properties. A heap, or rather a layer of such

a kind, as to heat gently, and that turned occasionally, would do best, adding the other two kinds of dung named above as early as convenient; and when the whole is blended, it is better not to add any more fresh dung, for that would keep in agitation the heating properties until the whole was exhausted, without being productive of good.

Now, though we have said the dung, as it is made, ought to be laid in a shed, yet we by no means recommend that shed to be a close one, otherwise the dung would be likely to heat too much, and become insupportable; any open-sided shed will do; or, in fine weather, the whole may be done out-of-doors; a large tree is not a bad thing to form a canopy over the operation, the great point being to get the dung sweetened and prepared without its being exhausted by the overheating which neglect so often occasions, on the one hand; or that long preparation which it is sometimes subjected to when new made dung is added daily to the stock from the stable; the latter mode keeping the mass too long in the process of preparation. We may, however, observe, that a little straw, or other litter, is not objectionable, and certainly need not all be taken out when the mass is in making; or if so, some may be added for use. Do not think that it is useless; on the contrary, we think it will tend to lighten and check that consolidation which a mass of dung only is sure to fall into; and that it is not without its uses, is evinced by the crops of Mushrooms which are occasionally to be met with when only tree-leaves, a little spent dung, or litter, has been mixed together to make up a hotbed. Here, it is evident that the roots of the Mushroom had found a congenial spot for their ramification, and their success was to be according; however, as it seldom happens that any one agent performs the whole part of a fertiliser, or the reverse, we will admit, that when a little spawn had been put on a newly-made-up Melon bed, or rather the heating material which formed it, and a good crop ensued, the result was owing to various causes, rather than to one; for the wisest of us are liable to err, and we are but too prone to give the credit, or blame, in accordance with our prejudices, or, what is equally the same thing, in accordance with our want of judgment on the subject.

Much may be done to render the success of Mushrooms more certain; good dung, carefully prepared, and put away in a careful manner, and beds made up when it was ready, and not till then, and spawn of a fresh and good kind put in a few days after, and the whole kept by covering, or otherwise, in that uniform state of genial warmth of about 60° or 65°, the likelihood is that Mushrooms will be produced with as much certainty of success as that Peas, Cauliflowers, &c., will follow the usual sowing, or planting of these things. Now, to obtain this end with but humble means, let us see how it is to be attained.

In the first place, I may say here, that a house heated by fire, or other artificial means, is not absolutely necessary to success, though such an auxiliary contributes much to it. An old shed, open at a side, or some portion of the tool shed, or other enclosed place, will do very well; or it may be, some corner near the fire-place, or "stock hole," which supplies heat to the "forcing house, &c." might be appropriated to this purpose; in this respect, it is not necessary that the bed should be made over any part of the heated surface, which would, in fact, be injurious rather than otherwise; but in such a place the atmosphere is generally warmed a little, quite sufficient to serve the purpose of producing Mushrooms, for I have seen them do very well in a bed out-of-doors, with no shelter whatever, except the covering of straw and litter which was thrown over them, and yet Mushrooms in abundance were gathered about February, and after, from a bed made in November; in fact, the

conditions necessary to the well-being of Mushrooms differ so much from that of many things else, that we hardly know how far to class them in the same conditions; for while most vegetation which contributes to the necessities or luxuries of the human race seems to delight in an atmosphere healthy and unpolluted, the fungus tribe, to which this belongs, prefer a more vitiated air; and though the Mushroom is seldom found growing spontaneously in damp and unwholesome cellars, yet, when the necessary food for it is placed there, it thrives quite as well, and perhaps better than in well-ventilated apartments; a dry air is the most baneful to it, while excess of moisture is also fatal to those fine fibrous substances we call spawn, which intersects the dung, or compost, from which it withdraws its support.

J. ROBSON.

(To be continued.)

CULTIVATION OF WHEAT UPON HEAVY LAND.

(Continued from Vol. x., page 502.)

I AM aware that some farmers object to the mode of sowing Wheat out of Clover lea upon clay soils; and I have often observed that it has not succeeded well; but I am satisfied that any cases of failure may be traced to a want of proper management of the land; and if the foregoing system of management be rigidly adhered to, that more grain will be produced, upon an average of seasons, upon this soil, when sown out of lea, than when sown after a fallow, or green crop.

In support of this opinion, I must observe, that I have invariably found lea Wheat much less liable to be lodged, or blighted, and particularly in the case of high farming, when the land is brought into a state of great fertility; that it is the only plan by which full crops can be produced; for although much larger crops of them may be grown after a fallow or green crop preparation, yet the superabundance of straw greatly endangers the crop, and renders the profitable yield of grain much more precarious.

The next mode of preparation to which I must allude, is that required after a crop of winter Beans, which is one of the crops preceding Wheat, standing sixth and last in the rotation before referred to.

As soon as the winter Beans are cut (when the weather is fine), the tillage of the land may be commenced and proceeded with advantageously some considerable time before the Beans are fit to carry to the stack.

Let the Beans be placed in hoiles or shocks, in straight lines, at a good distance apart, by setting up the produce of four or five ridges upon one; this will give space for working four-fifths of the land; and, indeed, the whole of the land may be partly cleaned before the crop is removed, if the shocks are shifted on to the part which has been previously worked.

The first thing to be done, as soon as the Beans are cut, is to use the scarifier at a moderate depth, just sufficient to cut up the weeds or grass which may be left amongst the crop, and, except in very unfavourable seasons, no great quantity of grass or weeds will be

found if the interculture and hoeing of the crop has been attended to at the proper period.

The harrows should then be freely used, in order to collect the weeds and rubbish, which should be carted away, as it is seldom, at this time of the year, the weeds can be got dry enough to burn freely without delaying the time which may be better employed in continuing the tillage of the land. I will suppose, after the land has been twice scarified, and the weeds collected and removed, that the surface is comparatively clean, in which case no ploughing will be required until the ridging-up the land for sowing takes place, and the sooner the manure is laid out and spread, and ploughed in, the better, which should be done according to the method previously recommended in the management for this crop after the long fallow; the land will then have time to remain, and become stale and mellow, and in a fit state to receive the seed in due season.

I must now proceed to consider the second division of our subject, namely, the preparation of land for the *Wheat crop upon good loamy land*.

In the management of this soil different rotations are in use, all of which, more or less, influence the mode of preparing the land for Wheat. In some parts of the kingdom, Wheat and Beans continue to be sown alternately, and no doubt with great advantage, when the preparation for the crops are well carried out, for the returns are large, and the attendant expenses of culture moderate. It is usual, in this rotation, to manure for the Beans and not for the Wheat; therefore, after the Beans have been removed, if the system of culture alluded to in the management of heavy clay land has been efficiently executed, the labour for preparing for Wheat will be trivial—the clearing the surface of weeds, and ridging the land to receive the seed, is all that will be required. Upon this soil, the seed time may be delayed with advantage, not requiring to be sown so early by a fortnight as heavy land, and a diminished quantity of seed may be used. Seven pecks will generally prove sufficient; indeed, when sown early, the quantity may be still further reduced with beneficial results.

The seed should always be drilled at not less than nine inches space between the rows; for in this rotation, the Wheat being always sown after the fallow crop, it is sure to be more or less infested with summer weeds, and should therefore be hoed in the spring.

Upon this soil Wheat is often sown alternately with Potatoes, when conveniently situated for the sale of the produce, near large and populous towns; and in many parts of the country Potatoes make one crop in the rotation, and is commonly followed by a Wheat crop, much more so than formerly; for it is found, since the early sorts only are planted, consequent upon the disease to which the crop is liable, that they do not remain long enough in the land, nor produce sufficient haulm to impoverish the land, except to a limited extent. A good portion of the manure applied for the Potatoes is, therefore, available for the Wheat crop.

After the Potatoes have been dug and removed, supposing no green crop is taken between, the land should

be treated precisely in the same manner as before described as necessary after the Bean crop, using the same quantity of seed at the same time, and applied by the drill. Having omitted to name the size of the ridges proper for this land, I must here observe that the fourteen turns (about 24 feet) are the best size, wherever the subsoil is porous enough to admit water freely; for the more level land can be laid, and with the fewer furrows, the more regular the produce will prove; for I have often noticed, in good soils, that the crop of Wheat has been laid and damaged on the top of small ridges, whilst the furrows have been comparatively bare.

JOSEPH BLUNDELL.

(To be continued.)

THE HISTORY OF A SINNER.

By the Authoress of "*My Flowers*" &c.

WE always feel particular interest in what concerns ourselves, or those who are in the same business or profession. We naturally feel more warmly to what belongs to ourselves; we draw more closely to people and things of our own kind and calling; and however we may love, and take interest in the doings and concerns of all our neighbours, yet there is something doubly attractive in those of our own body; and so I am going to write about a *gardener*. Let my readers mark and inwardly digest the words of Job, "How oft is the candle of the wicked put out! and how oft cometh their destruction upon them! God distributeth sorrow in his anger!" Oh! that we laid this to heart; then, whether we tilled the soil, or eat of its fatness, we should always rejoice before the Lord.

"Edward Moore was apprenticed to a nobleman's gardener in Staffordshire, where he had every opportunity of thoroughly learning his business, for his master was celebrated in his day, for having brought the gardens of —— Hall to a state of perfection, which induced the lovers of horticulture to travel many miles to pay them a passing visit. Nor did Moore neglect his opportunities; for at the expiration of his apprenticeship he left his employment a thorough proficient in his craft, and fully competent himself to take the management of extensive grounds. A situation soon offered itself, and he was engaged on liberal terms; and there, probably, he might have remained until this day, had his conduct been such as to merit the confidence and esteem of his employer. But alas! I fear, like too many of the same class, he had not the fear of God before his eyes; and he hesitated not to attempt to advance his own interest at the expense of all that was right in the eyes of God and man. It is now some years since he was first brought to my notice by applying to me for employment, as a daily gardener, in the neighbourhood of a provincial town, where I ascertained he had been carrying on a kind of nursery, on a small scale, but being without capital his project had failed, and he was compelled to seek employment as a daily gardener. I found, from conversation, that he was theoretically, at least, acquainted with his business, and being then in want of just such a person, I gave him occasional employment. His manners were civil and polite, and his learning above the generality of his station; but there was a want of candour in his expression, and it was rarely that you could get a fair honest gaze into your face. He would converse with a civility almost amounting to servility, but would always *avoid the eye*. His appearance was untidy, which showed that his helpmate at home was untidy too. On one occasion I was led to call at his cottage, and I found what I suspected—that his wife was a poor, wretched creature, his house was filthy, and his children miserably dirty and neglected. How, then, was this? Here was a man who had possessed advantages seldom enjoyed by others; he had received an excellent and thorough knowledge of his business from one of the best gardeners of the day, and upon the strength of it had obtained what might have been a permanent situation on liberal terms; and yet we find

him seeking employment in evident poverty, and possessing a wretched home. At length the secret came out.

"I was called upon one day by the overseer of a neighbouring parish, whom I had slightly known for some time. He asked me, if I did not occasionally employ, as gardener, a man of the name of Moore. I told him, without hesitation, that I did. Could I, then, tell him where he was to be found, for he was charged with a summons for him to appear before a bench of magistrates, to show cause why he neglected to fulfil his payments to support his wife, who was chargeable to the parish. I asked what he meant, for his wife lived with him? "Ah! no, sir," he said "she is not his wife, but the wife of another man; his real wife lives in our parish, and she who now lives with him is the wife of a fellow-servant, for whom he has deserted her to whom he was really married." And the truth turned out to be, that he had married a woman much older than himself, for the sake of a little property, which he quickly dissipated, and then attached himself to a woman as depraved as himself, and the wife of another man. After this he was thrown into prison, and the last time I saw him he was the picture of wretchedness and poverty, with limbs crippled by rheumatism. If he is not already the inmate of a union workhouse, with his pretended wife and her unhappy progeny, he certainly soon will be; or probably death, e'er this, may have summoned him into the presence of Him to whom he will have to render up a fearful account.

"Cottage Gardeners! think well and solemnly of this! Moore was not a drunkard, as too many of his class unhappily are: but he lived in open and undisguised and deadly soul-destroying sin, which is sure, even here on earth, to bring its own reward; for truly does the Scripture say, "there is no peace, saith my God, for the wicked."

"Readers! this is a true tale,—the history of a sinner. It shows us the blighting, withering nature of indulged sin. It shows us how "equal" are the Lord's ways, how "unequal" are the ways of man. It shows us how surely the cankerworm feeds upon the root of worldly prosperity when iniquity is bound up in the heart. It shows us that neither planting, nor watering, can avail anything, if the blessing of God is withheld, which alone giveth the increase."

This deepy instructive narrative has been furnished by the same kind heart that has already given several for the benefit of our readers. His own eyes witnessed the circumstances, and they are all simply and strictly true. What can I add to the lesson conveyed by this striking instance of God's faithfulness and truth? Let us all lay it to our hearts, and if we listen diligently to the "still, small voice" within, we shall need no man's teaching.

We are connected with, or interested in, agricultural or horticultural matters. We shall, therefore, all feel the power of the Lord's beautiful history of His own gardening experience, and of the treatment His plants receive from His righteous hand. "My beloved hath a vineyard in a very fruitful hill: and he fenced it, and gathered out the stones thereof, and planted it with the choicest vines, and built a tower in the midst of it, and made a wine-press therein: and he looked that it should bring forth grapes, and it brought forth wild grapes." "What could have been done more to my vineyard than I have done to it? Wherefore, when I looked that it should bring forth grapes, brought it forth wild grapes. And now go to. I will tell you what I will do to my vineyard: I will take away the hedge thereof, and it shall be eaten up; and break down the wall thereof, and it shall be trodden down; and I will lay it waste; it shall not be pruned, nor digged; but there shall come up briars and thorns: I will also command the clouds that they rain no rain upon it."

Readers! this was God's dealing with the house of Israel, His vineyard: and with "the men of Judah, His pleasant plant." It is His dealing with all His people everywhere; and will be our portion if we deal wickedly: it was the portion of Edward Moore! Yet what does the Lord say further to us? "Repent, and turn yourselves from all your transgressions; so iniquity shall not be your ruin." "For I have no pleasure in the death of him that dieth, saith the Lord God: wherefore turn yourselves, and live ye." Readers! this word is for you.

POULTRY IN MORTON'S CYCLOPÆDIA OF FARMING.

(From a Correspondent).

THE 23rd part of "Morton's Cyclopædia of Farming," recently published, contains an article on "Poultry," of which the perusal of the first few lines would have afforded an easy clue to the author, even supposing his initials had not been appended.

It is, unquestionably, a very able abstract of the volume on "Ornamental and Domestic Poultry," but the rapid progress of improvement in the poultry-yard that has now been going on for the last two years, has not, we think, been duly recorded. A reference to the illustrations confirms us in this view. The *Cochin-Chinas*, for instance, although they might possibly have passed muster in the early days of their race in this country, are such as would now be at once discarded. A foot-note, indeed, announces, in apologetic strain, that "both birds have too much tail," but we should equally dissent to their figure also. There are other points connected with this breed to which we should have expected the attention of the writer would have been especially directed; among these might be enumerated the singular origin of the great majority of the black birds, and the equally curious fact of some of the best specimens of the white birds, having been bred during the present year from parents of which one was black. The alleged descent, too, of the white strain that has most distinguished itself in this country, from buff ancestors, would have been a topic highly interesting to the poultry-keeping public, and on which, therefore, some little space would have been well bestowed. These are matters that have only recently attracted notice, and which are, in a great measure, subsequent to other publications of this description.

Assuredly the writer has not been fortunate in his artist, for the illustration of the *Game Cock* conveys the idea of a well-conditioned *Dorking*, rather than the nervous and muscular, but yet agile form of the former bird. The *Hamburghs* are better, but the crest of the white top-knotted *Black Polish Hen* is such as would at once condemn her.

It is no fault of the author, whose descriptions, indeed, in frequent instances, would correct the errors of the draughtsman, but the portraits are on too small a scale, and lack, moreover, the effect of colour. Without this latter adjunct, indeed, such representations are of little utility. The arrangement of the light and dark portions of a bird's plumage is all that plain black and white is capable of, and when we remember, that in many of the ornamental varieties, different shades of the same, or allied colours, are the source of important distinctions, the value of coloured portraits becomes apparent.

We find, at page 715, the repetition of the opinion put forth in "Ornamental and Domestic Poultry," as to the varieties of the *Domestic Goose* being merely nominal. Enough, however, has elsewhere been shown on their points of distinction to earn the position of "*permanent varieties*" for the Emden and Toulouse families. But where a "*permanent variety*" ends, and a "*specific difference*" commences, we should be unwilling to decide. The subject is one that requires more careful investigation, which, indeed, may be materially assisted by the singular points of resemblance between the Toulouse and the Grey-lag Goose, "*Anas ferus*," or "*Palustris*."

The directions for poultry-management are concise and practical, but a sentence at the conclusion, we should fear, was more likely to bring the disease of "gapes" to a fatal conclusion than to effect a cure. "Another successful remedy is to take a pinion feather, and strip it, excepting one-and-a-half-inch at the end, thrusting it gently down the bird's throat, turning it round, and drawing it out till all the worms are extracted." The extreme delicacy of the membranes connected with the throat must always render such treatment extremely hazardous, and cases of recovery, we imagine, bear a very small proportion to those on which this operation has been attempted. Whether the "*Epsom Salts*," or the other saline preparation more frequently heard of in connection with pigeons than other birds, is efficacious or otherwise, we can neither affirm nor deny; but it is our strong opinion, that if nature fails to carry the chicken patient through this disease, our assistance confers but a

limited and most uncertain degree of benefit. Previous attention before hand, by seeing that proper housing, and a regular provision of nutritious food are punctually cared for, will always prove the best economy. On the diseases of poultry, indeed, we have much to learn, and when we find, by experiment, that ten, and even twenty grains of calomel, may be given to a chicken of four months old, and as much as forty-eight grains of jalap in twenty-four hours to one of less than one month, a poultry pharmacopœia will hardly prove a matter of easy accomplishment.

It was with considerable interest that we turned to this article, as likely, from its necessary limitations to the detail of economical poultry-keeping, to place the subject in such a point of view as might induce the more active co-operation of English farmers and cottagers with those Societies that have been established for the improvement of our poultry generally. With respect to fowls, we have only a repetition of what has already been given to the public, though clearly written, and well-arranged, and judiciously condensed. But with *Turkeys* and *Guinea Fowls*, the prospect of increased gain is held out, from the necessary condition of this country, which must, in the opinion of the writer, become, year by year, less favourable to the production of game, for the absence of which these birds are pointed out as the best substitute. If Pheasants and Partridges must disappear from our board, (though we confess that the time seems far distant when presence in moderate numbers will be pronounced intolerable), admirable substitutes are, doubtless, at hand in *Turkeys* and *Guinea Fowls*. But these, unfortunately, are the birds which the farmer finds most difficult to provide, and since cost will limit consumption, we are much inclined to doubt whether a far better return may not be looked for from *Fowls*, *Geese*, and even *Ducks*, rather than the two first-named excellent, but still expensive birds.

All recommendations as to the description of Poultry to be kept should be strictly ruled by the conditions of the locality proposed for them. Now, supposing that the cultivated land of the country might be divided into two equal portions, one light, the other heavy; that only which is called "light," will be found suitable for the profitable rearing of *Turkeys* and *Guinea Fowls*. Even if our division be incorrect, and, as some say, a light soil preponderates, still, when unfavourable circumstances in respect of climate, and exposure to cold winds are taken into consideration, we shall not be far wrong in saying that not more than one-half of England, generally, is adapted for profitable Turkey-rearing. If this be true of these birds, still more correct does it become when *Guinea Fowls* are concerned, the young of these, indeed, being even still more delicate in their early days.

We are, therefore, of opinion, that the advice given to farmers in this essay must be received with caution, and that many conditions, not always forthcoming, are essential to render *Turkeys* or *Guinea Fowls* profitable stock. When these, however, are found, and a careful system of management prevails, the returns are, doubtless, satisfactory; but the retail profits of the poulterer exceed, if we are not mistaken, the wholesale gain of the breeder. At the present moment, indeed, when the price of grain has such an upward tendency, accurate calculations would be required to prove the profit of the Turkey-keeper.

With a renewed expression of our regret that such an article, so ably written, should not have brought down the state of economical poultry-keeping to the most recent periods, we now conclude our remarks. Even the last few months have suggested inquiries which would have far more appropriately occupied the space that has been given to such topics as "Malay Cock-fighting," and the "Correspondence of Mesdames de Coislin and Luard." Amusingly told as these anecdotes most unquestionably are, we still hold to our opinion that they have no title to insertion in a "Farmer's Encyclopedia."

UNITED GARDENERS' REGISTRY.

PERCEIVING your notice of the United Gardeners' Registry, in the number of THE COTTAGE GARDENER for September 8th., and in which a few questions are proposed, we

consider it our duty to answer. 1st. "Where has the Society met?" It has met, and still meets, in rooms at 29, Great Charlotte Street, Liverpool. 2nd. "Who constituted the committee?" A body of practical gardeners. 3rd. "Who are the Committee?" Twenty-four gardeners chosen from the body of supporters, who, at this time, amount to upwards of 200; the names and addresses of which can be furnished on application by letter, to my residence, 25, Miles Street, Toxteth Park, Liverpool, which address, time, and place of meeting is written on each book of rules that are given out. 4th. What is the use of the word "united?" It was used for a specific purpose, a detail of which can be furnished if necessary. 5th. "How has the visiting to be conducted; on the water system, or the free and easy mode?" That will be left to the judgment of the visitors themselves; but I am happy I can add that many of our members prefer the former to the latter.

To other queries proposed, we will let time furnish answers; but if any of our proceedings "smack" of unfair dealing, assume inquisitor's power, or play the libeler's part, we are in the hands of those we wish to impose upon, and I hope they will exercise their prerogative.

If you, sir, or any others, would wish to know our proceedings in detail, I shall be happy to furnish them.

G. THOMSON, Gardener.

POULTRY-YARD REPORTS.

I ALWAYS read, with great interest, your articles on *Poultry*; and thinking the account of my yard may be useful to some of your readers, I send it, with permission to make use of it, or any portion of it.

I have tried many sorts, but have given up all but the *Cochins*. I do not find them enormous eaters, as will be seen by my expenses. I now have 136 fowls of that breed, of course, most of them chickens of this year, but at that age when they require the greatest quantity, and the best quality of food, I find them cost me 148 pence (12s. 4d.) a week, i. e., 1d. a week each, and 1s. over. They are kept in five separate lots, no farm-yard, and no extras, but cabbage leaves; are fed four times a day, alternately on corn and meal, and have as much as they can eat, though no waste. I do everything myself, and, therefore, well know their wants and appetites. At first I was too careful of my food, and found the birds always hungry, and never satisfied, and ready to eat double the quantity. I fed very generously for a few days, and then found, that they only eat half; when once in condition, a little keeps them so. I must mention, however, that out of this lot, one dozen of hens and cocks are kept for one halfpenny each per week; in the evening they have a small feed of *oats*, and having a nice orchard to run in are busy and happy all the rest of the day, and at night, crops quite full.

I can recommend this plan to those who would obtain eggs economically; in the winter and early spring, I shall add to these a *hot meal* supper, as they will then not get much for themselves. It is a mistake to think *Cochins* will not hunt about for their own food, they only get lazy when high fed. I must mention, these hens lay well, even at their worst season, and are very healthy. You will see I pay very dear for their food, buying in small quantities, and all things being now very dear. The food, too, you will allow to be the very best. Perhaps none but *masters*, who feed their own birds, would be so careful.

I am sorry to trouble you with so long a letter on my favourite topic, and did not intend writing half so much, but you may omit any parts which will not be useful to poultry-keepers.—H. G.

COST PER WEEK OF 136 COCHINS.

	s.	d.
1 bushel of Barley	4	6
½ a stone of Oats	0	6
½ a stone of Shellings	1	0
½ a stone of Scotch Oatmeal	1	2
4 stone of Barleymeal, at 1s. 1d., or fine Sharps, } at 1s. 2d., alternate weeks, averages	4	6
½ a stone of Bran	0	4
½ of a stone of Rice	0	4
136 fowls. }		
148 pence. }	12	4

CULTURE OF BRITISH ORCHISES.

(Continued from Vol. x. page 487.)

In my last letter, I gave a short account of seven different kinds of Orchises, which generally bloom between the second week in May and the beginning of June; the other seven flower rather later than that. The first is

8. *ORCHIS MACULATA*.—This is a well-known Orchis, and may be found in almost any soil. It is, perhaps, most frequently found in chalk, but it is never so fine there as it is in swampy meadows, growing with *O. latifolia*. It may be taken up and cultivated in a garden without any difficulty, and will multiply fast, especially if it is planted in bog-earth.

9. *GYNADENIA CONOPSEA*.—One of the most beautiful, and most sweetly-scented of the whole class. It appears to be nearly as easily cultivated as *O. maculata*, though it would prefer a chalk bank in the sun, with a little thin herbage growing on it. A rose-coloured variety of this may be found occasionally.

10. *OPHYRS APIFERA*.—The "Bee Orchis," a most singular flower, having a brown body, with pink wings, very like a real bee, especially when it blooms pale. As to position, this requires what *G. conopsea* prefers; and I should think that with a little trouble it might be easily grown. There are three varieties of it, "*Ophrys aranifera*," "*Ophrys arachnites*," and "*Ophrys fucifera*," which have green wings instead of pink, besides other small differences.

11. *HERMINIUM MONORCHIS*.—The Green Musk Orchis, a small, uninteresting, green flower, which grows on a chalk slope, and flowers in July.

12. *ORCHIS USTULATA*.—A pale, pretty-looking dwarf Orchis, growing on chalky downs, and said to be tolerably abundant. Singularly enough, it is not to be found in this neighbourhood, so that I do not know much about it.

13. *ORCHIS HERCINA*.—The "Lizard Orchis," which is now very rarely found in England. It is the tallest of the tribe, "attaining a height of three feet, and producing above sixty flowers on a spike." (Sir J. Smith.) The colour of the flower is a pale purple, and its hues are said to be brighter in hot, and duller in cold seasons. This is a chalk Orchis, and from its size and singular appearance could not, if seen, be mistaken.

14. *ORCHIS PYRAMIDALIS*.—The flowers of this are of a bright rose-colour, and from their forming into the shape of a pyramid it derives its name. It requires the same culture as *O. apifera*, and blooms in July, being the latest of the tribe.

I have now gone through all the plants that can fairly be called Orchises of British growth; and I hope that your readers will not be deterred, by the fear of failure, from trying to grow them as they should be grown. Let them choose out a warm, sunny bank, and after having dug out the earth to the depth of a foot or so, fill it in with chalky soil. If the Orchises are put in as soon as they are out of bloom, many of them will appear above ground by the January or February following; and I am persuaded that they will live, bloom, and thrive there, as well as in their own haunts. If the top of the bank has any shrubs growing on it, *Orchis fusca* may be grown amongst them, and that very beautiful thing, *Epipactis grandiflora*. This last, however, seems to like to have a good deal of rotten mould in the soil, which should, therefore, be given it, and it may require a deeper shade than *O. fusca*. I shall be glad to hear, if any of your readers should try it, how they succeed; and I wish them all success in the undertaking. W. P.

POULTRY PENS.

I AM induced to offer some observations to that class of your readers who take an interest in poultry breeding and exhibitions, relative to the best mode of transit of choice fowls, and to the introduction of a scheme which may not only serve the purpose of removing them from place to place with safety, but of holding them securely, and displaying them to advantage when they arrive at their destined place of exhibition. To this end, I would suggest the introduction of a cage, the sides, back, and a part of the top of which should be made of wood, and the other portions of strong galvanized wire. The lower part of the wire-work, in front,

should be made to lift up, for the admission of the poultry, cleaning out of the cage &c, but which could be so fastened down with a running wire, that none could gain access to the interior without the knowledge of the exhibitor. In a cage so constructed, the food could be placed in convenient fixed troughs on either side; and, where necessary, a roost might be fixed, which could be easily removed during the day.

Considering the importance which attaches to anything connected with the breeding of poultry, and having seen very fine plumaged birds seriously injured for the want of a proper mode of conveyance, I have thought a suggestion of this kind worthy of mention, if only as tending to a more practical and efficient method.

Another advantage attending this plan, would be the saving of expense to the promoters of Poultry Associations; the pens all being made of one size—say two feet six inches by two feet, for Dorking, Hamburg, Spanish, and Bantam fowls; and three feet by two feet six, for Cochins and Malays; by being placed side by side, according to their respective numbers, on a simple stand, they would of themselves form an admirable display without the aid of carpenters; the poultry need not be handled, nor removed; and that confusion and frequently-expressed dissatisfaction of exhibitors, which is well known to exist by all who have taken an active interest in exhibitions of this kind, would be entirely superseded.

I have had a cage made upon the plan suggested (to which I invite the attention of gentlemen, amateurs, and breeders), which, in the opinion of several competent authorities to whom I have submitted it, and in its first cost (which is comparatively small), has proved perfectly satisfactory.—W. DRAX, *Suan Lane, City*.

POULTRY SALES.

ABOUT two hundred and twenty lots of different varieties, the property of J. Fairlie, Esq., of Cheveley Park, were offered for sale by Mr. Stevens on the 11th instant, and about two hundred of the lots sold. The attendance was very numerous, and many really buyers. The *Cochins*, good, sold pretty well, but the inferior of which, though many were offered, did not find buyers. Remarkable features in this sale were, that Lot 189, an *Audalusian Cock*, fetched the enormous price of £13 10s.; that the *Dorkings* fetched such high prices, the bidders being Rev. James Boys, one or two strangers, and Mr. Catling; but the buyer of nearly all was the Rev. T. Thursby, of Avington Rectory, near Northampton. *Dorkings* are much sought after. The highest prices for *Shanghaes* were Lot 69. Buff hen (Andrews and Sturgeon), clear hackle, £5 5s. Lot 100, Lemon Cockerel, prize bird at Surrey and Bury Shows, £7 15s. Lot 124, Buff Pullet, "Ida," purchased at Lord Ducie's sale, £7 17s. 6d. Lot 140, Silver Cinnamon Pullet, £7 10. The highest price for a *White Shanghae* was for a hen, Lot 92, £3 15s.; and for a *Black Shanghae* hen, Lot 105, £1 11. In *Dorkings*, Lot 199, "Two hens, very fine," £6. *Bantams*, black and white, about 12s. each. The *Chamois Polands* were bought in, not more than £2 5s. each being bid for them; and the *Dumplings* were bought in at an average of £4 10s. each. The best *Turkey*, a cock, Lot 204, sold for £3 3s.; the best *Gosling*, Lot 210, for £1 8s.; and the best *Guinea Fowls*, Lot 216, for £2 the pair.

On the following day, Mrs. E. George's *Shanghaes* were sold by Mr. Strafford. They were beautiful birds, and in first-rate condition. The highest prices were for a pullet, Lot 15, which took first prize at West Kent Show, £6; and cockerel, Lot 17, her companion there, £5 10s.; and their sisters, Lots 40 and 58, sold respectively for £16 and £15 10s. There were 120 lots, and the gross sum they fetched was about £235.

GOLD FISH.

IN reply to "G. W.'s" enquiry in THE COTTAGE GARDENER of the 29th ultimo, I beg to inform you, that the eggs which are said to be given, on certain occasions, to Gold Fish, in China, are those of a species of Grasshopper, called *Cicada* or *Tettix*, which insects, according to Aristotle, were

considered as dainties by the great epicures of his day. They are brought in large quantities to the market of Quangae, in bamboo cages, probably for the same purpose. I was told by a Mandarin, that the maggots of the *Noctua brassica*, were quite as efficacious as the Cicada's eggs.

Can your experienced correspondent, "T. R., of the Dover Road," explain the process by which the Bonzes, or Priests of Fo, are said to change, instantaneously, the colours of the fish preserved in their sacred tanks? It would seem that this operation is performed annually, in the Great Temple, at Quegling, and esteemed a miracle; so that, probably, it is a state secret, like the liquefaction of St. Januarius's blood at Naples.

As I am collecting notes, for publication, on this very interesting branch of Ichthyology, I feel anxious to put myself into direct communication with "T. R.," if he would kindly favour me with his name, and permit a private interview at his convenience.—T. WORTHEN.

TO CORRESPONDENTS.

THE POOR WINDOW (Comfort).—The draft is received with grateful thanks. The subject will be carefully considered, and a further communication made.

WILLIAM ADAMS (C.).—The five shillings came duly, and we have to apologize for not noticing the fact. It would save a post to write direct to "G. W. Johnson, Esq., Canon Street, Winchester."

RAPE-CULTURE.—An article will shortly appear, in which the culture of Rape will be treated at full length. The sort of Wheat best suited for your land would be the *Hoptoun White*, or *Morton's Red-strawed White*; and the best way to prevent your wheat becoming root-false is to drill deep, and make the land firm, either by sheep-treading, pressing, or rolling.—J. B.

SPRING-SOWN WHEAT (W. Lort).—No variety of Wheat usually adapted for autumn sowing will be injured for that purpose by having been once sown in the spring. The best manure for wheat upon heavy land, to be applied in the spring, is from two to three cwt. per acre of Peruvian guano harrowed in during dry weather, not later than February or March.—J. B.

IXIAS (Zoe).—There is no reason why your *Ixias* and *Sparaxis* should not do just as well in that locality, which we happen to know, as they did in Jersey, exactly in the way you propose. As to distance from bulb to bulb, two inches apart will not be too thick, and six inches apart will not be too wide. Be ruled in this by your space, &c. Three inches of light soil, and one inch of sand over them, will be the right depth for you; and if the winter comes very hard, a mat, or couple of mats, or some equivalent, must be thrown over the beds; also, late in the spring, if the wind is very cutting. You must fold the beds as they fold sheep on turnips, and tie a mat all round the hurdles, leaving the top open. Some contrivance of that sort may be necessary. The easiest and best way to plant a bed of *Ixias*, is first to dig the bed and mix a quantity of leaf-mould and sand with it, making it just level with the grass or gravel; then mark the places for the bulbs, put half-a-handful of sand to each mark, push the bulbs into the sand and gather it over them, then have fine sandy soil, and nearly dry, and cover it all over the bed full three inches, and dust the surface with fresh soot to put mice on the wrong scent.

CONSERVATORY PLANTS AND CLIMBERS (G. B. C.).—Now we understand you perfectly; but we fear you will not be advised by us. Nothing will give you satisfaction, after the first two years, on the back wall, eleven feet high, except *Camellias* as stated by us, at Bank Grove. *Elegans*, pink; *Albertus*, variegated; *Coralina*, coral-scarlet; *Inbricata*, crimson; and *Finbriata*, pure white; are among the best for a back wall. *Fuchsia serratifolia*, is one of the best back greenhouse climbers, and in two years would get up to the top, and run along the arches, flowering from September to May. *Fuchsia coralina* would also soon rise from the back wall to the rafters, or arches. *Tacsonia* the same, but they would soon overrun the whole house. For the end wall, seventeen feet high, the best plants in the world are *Mandevilla suaveolens*, *Plumbago Capensis*, or *Acacia pubescens*. For the pillars along the front, there are none better than what Mr. Fish recommended, over and over again, which may be seen on reference to the index.

EARLY PRODUCTIVENESS OF SHANGHAI.—Mr. G. F. Mosely, of the Fortune of War, King's Road, Camden Town, says,—"I have taken the liberty of forwarding to you an extraordinary instance of the great fecundity of the Cochinchina fowls. I had a brood of chickens hatched March 16th last, one of which layed on the 10th of August, being just twenty-one weeks' old. I had no idea of sitting any more eggs this season, but having altered my mind, I sat a hen on seventeen eggs, (two of which were layed by the pullet just mentioned) on September 7th., that being four weeks after she commenced laying; hatched the two pullets eggs, with thirteen others, on the 27th of September, all of which are alive and healthy. The whole of these events have not taken up more time than six months and eleven days."

DISEASED DORKING (J. P.).—The symptoms of rattling in the throat, and panting, indicate an affection of the lungs and windpipe, most probably inflammatory. The treatment should consist in a dry, warm shelter, particularly at night; and if this alone is not effectual, a tea-spoonful of antimonial wine may be given, mixed up with meal.

SPANISH HEN NOT LAYING (A Constant Reader).—The cause of the hen not laying for so many months, without any evident illness, is either inaction or disease of the ovary. At this period of the year, especially as she is moulting, I should not advise stimulating the organ by any means, although a little extra animal food and warm shelter might be tried in the spring. If there is disease of the ovary this case is hopeless, as it is

nearly always a structural change. The writer speaks of "Mr. Tegetmeier's specific, Calomel and Antimony." I must beg again to state that I never recommended this as a specific for all diseases of the egg organs; it is useful in one disease of them only, that is, inflammation of the egg passage, indicated by the laying of imperfectly formed eggs. In the above case it would be of no service.—W. B. TEGETMEIER.

BLACK BARBAROSSA GRAPE (Dan).—The Black Barbarossa is, indeed, worth growing; no late Vinery is complete without it. It is understood to be a free bearer, and is of capital flavour. We are not assured that it requires any particularly high temperature; if you are going to plant it in the same house with late Hambro', you may put it at the warmest end. If we were going to plant a late house with a mixture, we should put Muscat at the hottest, and St. Peter's next, Barbarossa next, and Hambro' at the coolest end.

VINE PRUNING (A. R. F.).—By all means cease watering your resting Vines. It is absurd to do so. *Rhynchospermum jussinioides* will do well in any ordinary greenhouse. The pruning described at page 336, will fit your case for years. The whole stem, when complete, must continue to be pruned by the advice in the second column of page 366.

BEES LEAVING HIVE.—Sarah, writing from Essex, says—"Yesterday (Sept. 30th), the bees of one of the cottagers in our village threw off a fine swarm, which were safely hived, and removed to their winter quarters. Do you think there is any probability of their prolonging their existence through the winter without the assistance of artificial food?" If the hive from which the bees issued be examined, it will most probably be found to contain neither bees nor honey; if so, want was the cause of their leaving it, so that it was a desertion, and not a swarm; without feeding, the bees cannot live a week.—J. H. P.

ROBBED BEES—QUEEN PRODUCING ONLY DRONES.—A writes thus,—"While great secrets in nature have been revealed, as it were, by a mere accident (as Schirack's discovery, for instance) it is not less true that 'Anomalies may be the finger-posts that point the way to unsuspected truths'; and this our learned author will allow to apply to the instinct of Bees, as well as to varieties among fowls. Can any of the Bee-keeping readers of THE COTTAGE GARDENER kindly assist my researches, by informing me if they have observed so great a deviation from the ordinary instinct of the Bees, which teaches them to preserve their community, as the destruction of the workers of a hive by each other would imply, and under what peculiar circumstances such evil warfare has been waged? I would also inquire if a Queen, which has been fertile in producing the eggs of workers, has been found afterwards to deposit those of drones only; and whether such deterioration of her powers may be traced to some shock received by the system from extreme fear, or some similar cause?" There appears a mistake in talking of Bees in one community destroying each other; the warfare will be found to be between two distinct families, and not between Bees of the same hive; poverty in the latter is the primary instigation of the wrong; no better reason can be given for such warfare. As to a Queen, fertile in laying worker eggs, afterwards producing drones only, seems to be a case requiring proof by experiment, and that of a difficult nature. The fact is very doubtful; and, after all, who knows how often a Queen is changed? Where such an occurrence takes place, it must be attributed to two different Queens, one succeeding the other.—J. H. P.

PENCILLED FEATHER (J. B. Chune).—The specimen sent is very beautiful, but not so superior to that we have published to justify the expense of another wood-cut.

AUTUMN-PLANTING POTATOES (A. B.).—On light, well-drained soil, autumn-planting is certainly to be preferred. Plant only very early ripening kinds, such as that known in Hampshire as the *July*. The *Fortyfold* is also an early ripener.

MILDEWED GRAPES (A Subscriber).—Hold a plateful of flowers of sulphur under each bunch, and rub each berry between the fingers and thumb dipped into the sulphur, so that each berry may be well covered with it. We have proved this to be effectual. Burning sulphur in the house would be fatal to every leaf of the vine, and destroy your crop.

LABELS (5th October).—The glass tubes you have sent are worthless from the brittleness of the hooks. The *Pipe Clay Labels* are those recommended some time since. *Zinc Labels* are the only indelible ones, if polished with coarse sandpaper, and then written upon immediately with the ink, for which the recipe is given at p. 272 of our 3rd volume.

LEAVES INJURED BY WATERING (A. Brown).—Our answer at page 411 was necessarily hypothetical, because we are not certain that what is called "scalding" always arises from the same cause. It is a much more intricate subject than can be disposed of in these necessarily brief answers, and we will take an early opportunity to write more fully upon the subject.

SAMBUCUS RACEMOSA.—H. M. may probably obtain some information if he sends his direction to the Rev. W. D. Fox, Delamere Rectory, near Chester.

CARROT-STORING (A. B.).—We have often tried the mode recommended by Mr. Errington at p. 503 of vol. 10, and can bear testimony, that if the carrots, after having the slice taken off their tops, are buried in sand or coal ashes, they are preserved, and with all their flavour, until long after those not so behaved have ceased to be useful.

LOVELL SHANGHAI (Agriculturist).—Write to Mrs. Somers Smith, Little Bentley Rectory, near Colchester. We cannot give you a reference further northward.

PRESERVING MELONS AND BERBERRIES.—M. M. F. will be obliged by a recipe for preserving Melons and Berberries in bunches for dessert. Your Rose tree producing flower buds which never open, is either in too cold a situation, or it requires the soil to be much enriched. Give it a powerful manuring now, and mulch over the roots early next spring.

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WEEKLY CALENDAR.

M D	D W	OCT. 27—NOV. 2, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
27	Th	Tortoise buries.	29.195—28.842	46—41	N.W.	06	47 a. 6	41 a. 4	morn.	25	16 2	300
28	F	St. SIMON AND ST. JUDE.	29.644—29.318	49—31	N.W.	02	49	39	1 13	26	16 7	301
29	S	Virginian Creeper leafless.	29.742—29.463	50—40	S.W.	22	50	37	2 32	27	16 11	302
30	Sun	23 SUNDAY AFTER TRINITY.	29.650—29.595	59—48	S.W.	14	52	35	3 53	28	16 14	303
31	M	Woodcock comes.	29.813—29.585	61—44	W.	—	54	34	5 17	29	16 16	304
1	Tu	ALL SAINTS.	29.773—29.675	62—57	S.	02	55	32	sets.	30	16 18	305
2	W	November; paling.	29.620—29.538	60—48	S.W.	61	58	30	5 a 16	1	16 18	306

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 53.0° and 37.2° respectively. The greatest heat, 67°, occurred on the 30th in 1833; and the lowest cold, 23°, on the 29th in 1842. During the period 85 days were fine, and on 97 rain fell.

NEW PLANTS.

EPISCIA MELLITIFOLIA (*Balm leaved Episcia*).



This genus belongs to the Natural Order of Gesnerworts, and of Didymia Gymnospermia of the Linnæan system. The generic name is derived from *epi*, upon, and *skia*, shade, because the species it includes prefer shady places. The specific name alludes to its coarse Balm-like leaves. It is the *Besleria mellitifolia* of some botanists. It is a stove herbaceous plant, being a native of the Carribean and West Indian Islands generally. It was known as long ago as 1789, but flowered at Kew, probably for the first time in Europe, during the March and April of the present year.

As now, and for the next two months, is the best of periods for shipping trees and plants to emigrant friends in Australia and New Zealand, we have made various enquiries, and received as various replies, from those who have been there; but they are all agreed in the sentiment embodied in this one sentence—"Never mind about novelties; send good old things—things that they can dwell over and say, 'Dont you remember where this grew in the old garden at home?'" God bless those that feel thus, say we; and we hope not a reader of THE COTTAGE GARDENER but will respond heartily—Amen. Let us quote a narrative that de-

It is about one foot high; stem purple; leaves dark green, and when young, with pink edges; flowers crimson.—(*Botanical Magazine*, t. 4720.)

RHODODENDRON GLAUCUM (*Glaucous-leaved Rhododendron*).

The Rhododendrons belong to the Natural Order of Heathworts, and to the Linnæan Decandria Monogynia Class and Order. It was raised at Kew from seeds sent home by Dr. Hooker, from the Sikkim Himalaya, in 1850; the plants showed flower-buds when about one foot high, and bloomed in April, 1853. They were grown in a cool greenhouse, but others, which have not bloomed yet, are thriving well in the open border.—(*Botanical Magazine*, t. 4721.)

The following description is given by Dr. Hooker, in the *Journal of the Horticultural Society*, vii. 102:—

"*R. glaucum*.—Distribution and range: *Sikkim* and *Bhotan*, in moist rocky places. 10,000 to 12,000 feet.

"This constitutes a small shrub of the average height of two feet. Branches scarcely so thick as a goosequill, yellowish-brown, often glaucous-white, the younger ones scaly. Leaves rather crowded at the extremities of the branches, one to three inches long, usually one to one-and-a-half inch broad, on short stalks, upper side deep green, when old naked above, below remarkably glaucous, almost white, and quite dotted with copious little scales, which in the young state cover the whole leaf, and at all times abound on the bractæas, bud, flower-stalks, and especially on the sepals. Flower-stalks seven to eight, almost in an umbel at the ends of the branches, erect, an inch or more long, rather slender. Flowers erect or inclined, pale pinkish-purple. Corolla rather more than an inch long, and about as broad in the widest part, tube campanulate, limb moderately spreading, of five nearly equal rounded notched lobes. The remarkable glaucous colour of the underside of the leaves, and the great development of the calyx, readily distinguish this species. In foliage it closely resembles *R. virgatum*, but the inflorescence and calyx are widely different. The whole plant has a powerful resinous smell, due to exceedingly small globules of a pale yellow colour which exude from beneath the little scales on the underside of the leaves. These scales are very curious; the majority are smaller, pale-coloured, exhibiting several concentric circles of small, nearly uniform cells; the larger are bristly at the margin, and consist of a centre or disc of small cells surrounded by a limb or margin of radiating elongated ones."

monstrates how universal is this clinging to "the old country," and that it is good to foster that attachment; and then let us proceed to the immediate subject of our remarks.

"THE EMIGRANT'S LARK.

"Henry Patterson and his wife Elizabeth sailed from the Tower in the year 1834, as emigrants on board a vessel heavily laden with passengers, and bound to Quebec.

"Patterson was an intimate friend of a noted bird-catcher in London called 'Charley Nash.' Now Nash had determined to make his friend a present of a good skylark to take to Canada with him; but not having what he called 'a real good un' among his collection, he went into the country on purpose to trap one. In this effort he suc-

ceeded, but when he returned to London he found that his friend Patterson had embarked, and that the vessel had sailed a few hours before he reached the Tower Stairs. He therefore jumped on board a steamer that was just starting, and overtook the ship just as she reached Gravesend, where he hired a small boat, and then sculling alongside, he was soon recognised by Patterson and his wife, who, with a crowd of other male and female emigrants, of all ages, were taking a last farewell of the various objects which the vessel was slowly passing.

"Here's a bird for you, Harry," said Nash to Patterson, as standing up in the skiff he took the frightened captive out of his hat; "and if it sings as well in a cage as it did just now in the air, it will be the best you have ever heard."

"Patterson, descending a few steps from the gangway, stretched out his hand and received the bird, which he immediately called '*Charley*,' in remembrance of his faithful friend Nash.

"In the Gulf of St. Lawrence the vessel was wrecked, almost every thing was lost except the lives of the crew and passengers, and accordingly, when Patterson, with his wife hanging heavily on his arm, landed in Canada, he was destitute of everything he had owned on board excepting *Charley*, whom he had preserved, and afterwards kept for three days in the foot of an old stocking.

"After some few sorrows, and after some little time, Patterson settled at Toronto, in the lower part of a small house in King Street, the principal thoroughfare of the town, where he worked as a shoemaker. His shop had a southern aspect; he drove a nail into the outside of his window, and regularly every morning, just before he sat upon his stool to commence his daily work, he carefully hung upon this nail a common skylark's cage, which had a solid back of dark wood, with a bow of small wire orchestra in front, upon the bottom of which there was to be seen, whenever it could be procured, a fresh sod of green turf.

"As *Charley's* wings were of no use to him in this prison, the only wholesome exercise he could take was by hopping on and off his little stage; and this sometimes he would continue to do most cheerfully for hours, stopping only occasionally to dip his bill into a small square tin box of water suspended on one side, and then to raise it for a second or two towards the sky. As soon, however, as (and only when his spirit moved him) this feathered captive again hopped upon his stage, and there, standing on a bit of British soil, with his little neck extended, his small head slightly turned, his drooping wings gently fluttering, his bright black eyes intently fixed upon the distant, deep, dark-blue Canada sky, he commenced his unpremeditated morning song, his extempore matin prayer!

"The effect of his thrilling notes, of his shrill, joyous song, of his pure, unadulterated English voice, upon the people of Canada, cannot be described, and, probably, can only be imagined by those who either by adversity have been prematurely weaned from their mother country, or who, from long-continued absence from it, and from hope deferred, have learned in a foreign land to appreciate the inestimable blessings of their father-land, of their parent home. All sorts of men, riding, driving, walking, propelled by urgent business, or sauntering for appetite or amusement, as if by word of command, stopped spell-bound to listen, for more or less time, to the inspired warbling, to the joyful hallelujahs of a common homely-dressed English lark! The loyal listened to him with the veneration with which they would have listened to the voice of their Sovereign; reformers, as they leaned towards him, heard nothing in his enchanting melody which even they could desire to improve. I (Sir Francis Head) believe that in the hearts of the most obdurate radicals he re-animating feelings of youthful attachment to their mother country; and that even the trading Yankee, in whose country birds of the most gorgeous plumage snuffle rather than sing, must have acknowledged that the heaven-born talent of this little bird unaccountably warmed the Anglo-Saxon blood that flowed in his veins. Nevertheless, whatever others may have felt, I must own that, although I always refrained from joining *Charley's* motley audience, yet, while he was singing, I never rode by him without acknowledging, as he stood with his outstretched neck looking to heaven, that he was (at all events, for his size),

the most powerful advocate of Church and State in Her Majesty's dominions; and that his eloquence was as strongly appreciated by others, Patterson received many convincing proofs.

"Three times, as he sat beneath the cage, proud as Lucifer, yet hammering away at a shoe-sole lying in purgatory on his lap-stone, and then, with a waxed thread in each hand, suddenly extending his elbows, like a scaramouch; three times was he interrupted in his work by people who each separately offered him one hundred dollars for his lark: an old farmer repeatedly offered him a hundred acres of land for him; and a poor Sussex carter, who had imprudently stopped to hear him sing, was so completely overwhelmed with affection and *maladie du pays*, that, walking into the shop, he offered him all he possessed in the world... his horse and cart; but Patterson would sell him to no one.

"On the evening of the —th of October, 1837, the shutters of Patterson's shop-windows were half closed, on account of his having that morning been accidentally shot dead on the island opposite the city. The widow's prospects were thus suddenly ruined, her hopes blasted, her goods sold, and I need hardly say that I made myself the owner—the lord and the master of poor Patterson's lark.

"It was my earnest desire, if possible, to better his condition, and I certainly felt very proud to possess him; but somehow or other this '*Charley-is-my-darling*' sort of feeling evidently was not reciprocal. Whether it was that in the conservatory of Government House at Toronto *Charley* missed the sky—whether it was that he disliked the movement, or rather *want* of movement, in my elbows—or whether from some mysterious feelings, some strange fancy or misgiving, the chamber of his mind was hung with black, I can only say that during the three months he remained in my service I could never induce him to open his mouth, and that up to the last hour of my departure he would never sing to me.

"On leaving Canada I gave him to Daniel Orris, an honest, faithful, loyal friend, who had accompanied me to the province. His station in life was about equal to that of poor Patterson; and accordingly, so soon as the bird was hung by him on the outside of his humble dwelling, he began to sing again as exquisitely as ever. He continued to do so all through Sir George Arthur's administration. He sang all the time Lord Durham was at work—he sang after the Legislative Council—the Executive Council—the House of Assembly of the province had ceased for ever to exist—he sang all the while the Imperial Parliament were framing and agreeing to an Act by which even the name of *Upper Canada* was to cease to exist—he sang all the while Lords John Russel and Sydenham were arranging, effecting, and perpetuating upon the United Provinces of Canada the baneful domination of what they called 'responsible government;' and then, feeling that the voice of an English lark could no longer be of any service to that noble portion of Her Majesty's dominions—he died!

"Orris sent me his skin, his skull, and his legs. I took them to the very best artist in London—the gentleman who stuffs for the British Museum—who told me, to my great joy, that these remains were perfectly uninjured. After listening with great professional interest to the case, he promised me that he would exert his utmost talent; and in about a month *Charley* returned to me with unruffled plumage, standing again on the little orchestra of his cage, with his mouth open, looking upwards—in short, in the attitude of singing, just as I have described him.

"I have had the whole covered with a large glass case, and upon the dark wooden back of the cage there is pasted a piece of white paper, upon which I have written the following words:—

THIS LARK,

TAKEN TO CANADA BY A POOR EMIGRANT,
WAS SHIPWRECKED IN THE ST. LAWRENCE,
AND AFTER SINGING AT TORONTO FOR NINE YEARS,
DIED THERE ON THE 14TH OF MARCH, 1843,
UNIVERSALLY REGRETTED.

"Home! Home! Sweet Home!"

To foster that love of home—to make the new home of the Emigrant as much like as possible to the old

home of his boyhood—is with us a cherished object; yet we never allow ourselves to be led away by our sympathies so far as to forget the still more important object of furnishing the Emigrant with what he will find most useful in his trans-atlantic home. When we receive enquiries upon such subjects we immediately consult those who we know to be most conversant with them; and we cannot do better for the guidance of all Emigrants, and their friends, than publish a letter from one, with the information we have gathered, for his guidance.

"I am about to proceed to New Zealand, and am desirous of ascertaining if I can take some of my favourites with me; or if the time I start should not be desirable for such a purpose, I am anxious to know the best and cheapest way of having them conveyed and sent; and, if not a departure from your usual plan, a recommendation to some first-rate nurseryman accustomed to such exportation.

"I propose to take Strawberries, various sorts—these I propose to take with me, in small 60's pots; Raspberries; Currants; Apricots, Nectarines, and Peaches, sorts; Plums, various kinds; Bullace and Damson; Apples, Pears, Cherries, Grapes, Gooseberries, Mulberry, of each various sorts.

"I may have to trouble you on some future occasion in reference to "Flowers," but, as my time will be seriously occupied, I must defer that until after my arrival; and may, at some future day, from that distant land, be enabled to give you some "jottings by the way" of gardening memoranda there.* I have said I propose taking *with me*. But would it not be more desirable to have them sent at the proper time, properly prepared, &c., so that upon their arrival the intended orchard for their reception may be prepared and ready?

"I need scarcely inform you the voyage will take about four months; and that standard trees, or even others of any size, would cost a great deal of money in carriage. It seems to me desirable that a similar plan to that I propose in reference to my Strawberries would do; that is to say, upon a number of small stocks, have grafted or budded the various varieties, and get them firmly and well-rooted in small 60's, or even a size larger pot, and, when well-established, to be turned out of the pots, the plants being only perhaps eleven or twelve inches high, might (be packed with earth adhering to the roots) be carefully and closely packed in boxes with moss, to take up but little room, comparatively. I further imagine, that the best time to do this would be about the period of shedding their leaves, *i. e.*, about the time usually adopted for replanting, say the end of November, they would reach me about June; a very good time, *there*, I fancy, for replanting. With these suggestions, I leave the matter in your hands for guidance and advice.—A. L. B."

This suggestion of having many scions of different varieties grafted upon one stock, for the convenience of Emigrants, is a very valuable suggestion; and the Nurseryman who first adopts it, and is able to announce that he has them for sale, will find himself amply recompensed.

We forwarded the above letter to Mr. Beaton, and this is his reply, together with a letter he had from Messrs. Low of the Clapton Nursery.

"I will give you a narrative of the proceedings in executing a commission for a lady who wished to send a supply of the *most useful* plants to New Zealand; but let me first observe, that no time should be lost in getting ready, and sending off, all plants and seeds destined to Australia and New Zealand this season; but any time between this and the new year will do, they will then reach the end of the journey in the autumn of those colonies, the very best time

after the long confinement on the voyage. In the first place, I had a list of all the best and more common hardy trees in England from the lady, and I was to add as many more of the best old English garden plants as I could get sent for so much money. The gentleman to whom they are now sent, as I understood, complained that although he could get all the novelties where he was, no one thought of sending him the old English plants which he knew so well at home, and which would put him in mind of home and the old times every time he saw them, or rode over his estates; hence the reasons for the list below. I said, last year, that I knew Mr. Low had a good deal of foreign trade, solely on account of his superior and safe-packing, and to him I trusted my commission accordingly. I wrote to him to say, that he must find the box, or boxes, for packing; that all the plants must be named in the old English style, as far as that could be done, or else numbered, and two copies of the list, according to the numbers, to be made, one to go with the plants, and the other to be sent to me for the lady; that the tallies for the names or numbers must be such as would not perish, or take any harm on the way, nor could be destroyed by rats; that I did not want large plants to be sent, but to have them stiff and firm about the collar and roots, that young shoots and tops might be pruned off to make more room; that the packing must be double-extra; as if more than the usual per centage of deaths were reported from New Zealand, I could never show my face again to the lady. After packing the plants, he was to cart them to the broker's office in London, who would see them on board; he was also to insure them, and to pay for the freight to New Zealand, and the price of the plants, packing, cartage, insurance, freight, and commission to broker, were not to exceed £12. All this has been just completed, and three plants of every one in the subjoined list has been sent. I also gave orders to strike any plant out of the list I sent which they thought would not bear the journey; and I see they dropped three or four, but added the same number of equally good plants. I do not know a better, or a more cheap, way of going to work in such cases. I asked to know, in general terms, at what rates Mr. Low sent fruit-trees to Australia, and to know if he still continued to export to distant parts. His own letter will tell his answer better than I could put it.—D. BEATON."

Messrs. Low's letter, dated Clapton Nursery, October 14th, is as follows:—

"We have lost no time in executing your commission for the lady, and the two cases are sent this day to the St. Catherine's Docks, for shipment in the '*Stately*,' which ship, the broker tells us, will sail to-morrow. We have selected *STIFF* plants, used great care in packing, and, by way of extra precaution, have bored a number of holes in the sides of the cases, which, we have been informed by parties who have received cases from us, is a very judicious plan, as it allows any damp air to escape. We enclose a copy of the contents of the two cases, and there are *three plants of each sort*; but we shall send you a list to tally with the numbers on the plants, *every one of which* has a leaden number attached to it by copper wire. We have also made out a list of fruit-trees, for which we have many orders. You might, to illustrate our experience in the mode of packing, say, that we are in the habit of shipping to Valparaiso, Sydney, New Zealand Ports, Mauritius, Back Settlements of America, Mexico, West Indian Islands, which, as the Yankees say, 'is fact.' We have not included Peaches, Nectarines, Apricots, or Strawberries, as, we believe, they have plenty in Australia; but you might introduce a clause to the effect that purchasers could make alterations if they thought fit."

- 20 Pears in variety.
- 20 Plums in variety.
- 20 Cherries in variety.
- 20 Apples in variety.
- 2 Quince.
- 20 Gooseberries in variety.
- 20 Currants in variety.

- 2 Mulberries, Black.
- 12 Double Camellias in variety.
- 12 Roses in variety.
- 20 Flowering Shrubs from other countries, and suitable to New Zealand climate.

"These could be supplied, packed, shipped, and insured, all charges paid to the port of destination, for £10."

* We shall be very much obliged by such communication.—Ed. C. G.

"Three plants of each of the following sent:—

Common Oak
Common Ash
Judas Tree
Horsechestnut
Birch
Beech, Common
Beech, Purple
Hornbeam
Lime
Mountain Ash
Scotch Laburnum
Common Elm
Black Italian Poplar
Lombardy Poplar
Balsam Poplar
Sycamore
Tulip tree
Alder
Larch
Acacia
Wild Cherry
Gleditschia
Catalpa
Maiden Hair Tree
Foxglove Tree
Plane Tree
Golden Willow
Hawthorn
Walnut
Evergreen Oaks
Common Yews
Common Holly
Tree Box
Common Juniper
Sweet Bay
Magnolia grandiflora
Common Laurel
Portugal Laurel
Laurestinus
Privet
Chinese Privet
Irish Ivy
Periwinkle

Pyrus japonica
Chorchorus japonica
Cimonanthus fragrans
Mezercons
Ribes sanguinea
Guilder Rose
Deutzia scabra
Lilac, Purple
Lilac, White
Hydrangeas
Common Jasmine
Sweet Clematis
Common Honeysuckle
Bignonia radicans
Aristolochia siphon
Ayrshire Roses
Macartney Roses
Banksian Roses, White
Banksian Roses, Yellow
Greville Rose
Moss Rose
Cabbage Rose
Cabbage Rose, White
Wistaria sinensis
Common Berberis
Southern Wood
Paeonies
Lavender
Ceanothus
Berberis dulcis
Buxus ballaria
Deutzia gracilis
Escallonia organensis
Euonymus japonica
Forsythia viridissima
Garrya elliptica
Jasminum ochroleucum
Jasminum Wallichianum
Pernettya phylllefolia
Ribes sanguinea pleno
Spiraea Douglasii
Rosemary

IN a familiar illustration of the literal meaning of the word "INFECTION," we have alluded to a figure of speech which explains, in the first place, a common law of the diffusion of certain diseases; and likewise points out the way to get rid of them altogether by a very large, rapid, and continuous dilution. We have classical authority for asserting contagion and infection to mean just one and the same thing. In the sense of being "tinged," we find this very term contagion applied to honey, salt, saffron; and we think it is much better to try to make out that "contagion" originally meant nothing more than "infection," in its limited sense, than to fall into the grave mistake of supposing that infection means all that we now consider the word contagion to carry along with it.

Lucretius uses the word contagion in what we take to be its original sense. "The contagion" says he, "seized men one after another:" "for (he adds) those who avoided visiting the sick, through love of life and fear of death, paid the penalty of this neglect in a bad and shameful end, unaided and alone."* Here the sense of the passage would be lost if we took contagion to mean personal contact, and not rather a general contamination of the air.

Desperate efforts have been made to get rid of this vulgar notion, that contagion implies a danger from immediate contact with a propinquity to the person,

and not a mere mediate contamination or taint in the air.

Some gentleman at the Registrar-General's Office, has invented a wholly new term, zymotic, to supply the place of the old ones. The idea is taken from the process of leavening (*zyma*, leaven) whereby we are given to understand that a certain (or an uncertain, and somewhat hypothetical) morbid element, when added to a suitable mass, will, under favouring circumstances, stir up a ferment therein.

An eminent medical writer lately put the literal accuracy of the zymotic theory to the test, by contending for the actual existence in cholera of a minute parasitic growth of the same nature as many funguses and vegetable moulds, the combined results of confined damp, warmth, putrefaction, &c. The very partial success of this assumption is sufficient to show that the new term, now in general use, is not generally understood in its literal sense.

The imperfection of language compels us every day to say what this thing or that is like, only, while we might struggle for ages in a vain attempt to define what it really is. How to describe the indescribable, is the grand difficulty. Metaphorical or symbolic forms of speech, rightly apprehended, are expressive enough, and highly suggestive; and true enough, when we bear in mind that painters' and poets' truth is not truth itself, but a faithful resemblance only.

It may not be uninteresting to inquire to what extent the resemblance holds good between contagions, infections, zymotics, and the natural phenomena with which they are in so many words compared. Thus we have seen how the notion of infecting (tainting, or dyeing), teaches us the rapidity with which either the one kind of taint or the other may be diffused in a confined, or dissipated altogether in an unconfined, medium.

There is a marked analogy between the views, which we do not quite despair of imparting to our readers, and a whole host of useful observations, on the laws of healthy and diseased growth recorded in our columns. The study of blights and vegetable diseases—diseases of cattle and poultry—and epidemics, or diseases of communities—may be pursued with advantage from a common point, and to a certain extent, we could put the whole thing into the form of a treatise on the cultivation of the cholera crop, which would be so plain that "even ladies might understand it," to borrow a glorious anticlimax of poor Dr. Buckland. Such a recipe we remember, for making ninety-five out of a hundred healthy young persons consumptive, by twelve months of judicious management. Such a recipe an ex-West Indian army surgeon has favoured the martinet with, for causing yellow fever among fresh recruits on foreign stations. Not very unlike was Linnæus's recipe for raising pearls by provoking a disease among shell-fish; or Kitchener's, (but the less said about that the better) for giving a wretched goose an enlarged liver.

The slight force of reaction attending the use of a broken limb, or a railway accident, or gunshot wound,

* Lucretius on the Nature of Things—Book vi., lines 1234 to 1239. This author speaks of the jaundiced eye painting all objects sallow by its contagion—iv. 337: and of the blind discriminating, by touch, things which had not the contagion of colour—xi. 740. He also promises to throw a contagious pleasantry over a very dry subject, as the physician, when he administers wormwood to a child, besmears his mouth, and the edge of the cup, with the yellow, sweet contagion of honey—iv. 8 to 13.

may, in an over-crowded hospital, and under favouring circumstances and management, become virulent; and, in one sense, contagious. It is said, and we do not discredit it, that if an old woman and a very little girl constantly sleep together, the child will become thin, haggard, prematurely old. The breath and exhalations from an unhealthy body must always be more deteriorating than from one in health. Are the results of the chances of war, then, or railway accidents, or that chronic complaint called old age, contagious? Contaminating, infecting, leaveners of the air, possibly they may be made, with very appropriate management, and favouring circumstances. Favouring circumstances, and such accessories as a close damp air, a certain elevation of temperature, a slight putrefaction or other kind of fermentation being excited, are necessary to ensure the raising of such low natural productions as mushrooms, vinegar plants, &c.; the microscopic parasites which may constitute blight, mouldiness, and the like. Practically, these accessories are all important; although it is most philosophical to presume the existence of a previous germ, how amazingly minute soever; and, however utterly abortive and insignificant, and problematical, it may be allowed to be, if unaided, unfostered, and alone.

There is a law, somewhere, under which the thistles in a neighbour's field may be indicted on account of the contagiousness of the seed. Here, however, common sense tells the farmer that it is only by keeping his own land clean (and attending to premonitory symptoms) that he can expect an immunity from thistles, and that thistles will spring in a single neglected field.

Pounds and pounds of white clover seed would be thrown away on an undrained, unlimed field; only drain and lime your pasture well, and this beautiful and valuable herb will overspread it at once with its contagion.

Names, and terms, and theories, are just so many threads upon which to string together facts and laboriously-collected series of observations. Yet we commonly despise, and dash to the ground, and utterly forget, all the pearls of price, whilst, like passionate children, we quarrel over that dear plaything—a piece of string.

J. J.

THE columns of *THE COTTAGE GARDENER*, as the general record of Poultry transactions, should always contain references to the conditions on which amateurs are invited to compete at the different shows.

The experience of those by whom the "Birmingham and Midland Counties Association" has been conducted, has hitherto been the usual guide in the management of more recently-formed societies. Now, among the alterations of the Birmingham prize list for the present year, was the rule which now enforces the separate exhibition of "*chickens*," and "*birds exceeding the age of one year*." In every point of view was this change desirable, for not only were competitors thus placed on a fairer footing, but the comparison of relative merits, by the judges and the public at large, became a far easier task. It is with regret, therefore, that we notice the intention of the "Bedfordshire Poultry Society," which

advertises its meeting for the last day of November, and the 1st and 2nd of December next, to adhere to the old regulation of permitting "chickens of 1853 to be shown in the classes for fowls of any age, at the option of the exhibitor."

But there is, also, another point on which we would address a serious remonstrance to the managers of this exhibition, for we see it announced that "the whole of the Poultry must be in the place of exhibition on the 28th of November;" so that, with the 29th set apart for the judges, and the three days during which the exhibition will remain open, the fowls which arrive on the Monday will not be released till the Saturday, on which day they will commence their travels homewards. Now, it is not in anticipation of the evils of such protracted confinement, but from their actual experience on several past occasions, that we again express our firm conviction, that a period of two days is amply sufficient for the duration of any poultry exhibition. With another day for the judges, and one for the reception of the birds, even this necessitates a longer retention of the fowls than is at all desirable; but this third day of exhibition is a gratuitous hazard which ought never to be incurred. The risks of exposing valuable poultry to the many evils consequent on over-crowding, the usual want of sufficient ventilation, contagion from diseased specimens, and the chances of the journey, are now tolerably well appreciated; and, taking the mere pecuniary view of the case, and regarding the probable success of the show as dependent on the "*quality*" of the pens exhibited, it will be found good policy to contract its duration within the narrowest limits that may combine the safety of the birds, the convenience of spectators, and the receipts of the Society. All this we believe may be effected in two days open to the public, and any excess, therefore, beyond this period, appears to us to be a measure that must ultimately, if not immediately, prove as adverse to the interests of the Society as it is undoubtedly prejudicial to the health of the birds.

The Birmingham authorities tell us, that in a financial point of view, they find themselves unable to reduce the number of days during which that show has hitherto been kept open. But, without entering into the consideration of what may be practicable in their case, and we must confess our belief that their apprehensions on this score would prove groundless, the case is wholly different when we came to the minor local societies, that have more or less followed in the same course. Surely, the good people of Bedfordshire, and the surrounding districts, with the facilities of locomotion now at their disposal, would find two days amply sufficient for the full inspection of all the specimens that may then be brought together; and assuredly many of the best will be wanting if this unwise resolution be persisted in. Some of our first breeders, be it remembered, have publicly expressed their view of the consequences of too extended a period for exhibition; and Bedfordshire cannot, we think, make out a special case for exceeding the prudent limits of a second day.

LATE, OR WINTER GRAPES.

ALTHOUGH I deny not, for a moment, that it requires much real gardening skill to produce a house of first-rate early Grapes, ripe, shall we say, in April, yet I must contend for an equal amount of, at least, attention in preserving late autumn Grapes until the middle of February, or later, in a fresh state. I, therefore, think that an examination of the principles on which such practice must be based will prove of interest. I have been in the habit of practically illustrating this question for many years; for in this part of the country we lay by all our strength for winter work; our gentry, in the main, entertaining much company during November, December, and January. I have annually, of late, carried Grapes up to the second week in February, but not further; and this solely because I am compelled, from circumstances, to keep pots of various kinds which require occasional waterings in the late vinery. Our *West's St. Peter's* have ever been the last to decay or to shrivel; but the *Barbarossa*, it would seem, has to divide the honours, henceforth, with this hitherto doughty champion of winter.

One thing may here be premised, and that is, that whoever may attempt to continue a succession of autumn-ripened Grapes all through the winter, until nearly March, may at once count on a loss of some thirty per cent., especially if pot-plants *must* be admitted in the structure devoted to the Vine. However, setting aside the pot-plants for a moment, what are the conditions of atmosphere most essential to the preservation of late Grapes? This will, in my opinion, be found in three points, which I have named in the order of their importance—First, a dry air; second, a comparatively low temperature; and, lastly, a daily motion in the air.

In the first case, we require dryness without heat, in the ordinary acceptation of the latter. This is a nice point to handle. Now, if there be no plants in the house this is not a difficult affair; but with a host of pot-plants the utmost caution is necessary. As to temperature, it must, of course, decline with the season; and, moreover, it may be, that the Grapes are not completely ripened; although it may at once be stated, that of whatever kind, they should be perfectly ripe and coloured by the third week in October; indeed, it is probable that they would keep none the worse if quite perfect a fortnight sooner. But so much depends on the Grapes being what is termed "*well-fed*;" and this is a matter almost entirely dependant on root-action. If the root be in a flourishing condition, this will occur as a matter of course, providing the atmospheric management has been good; if a bad root, no amount of in-door's care can atone for it. Such being the case, I would say, that from the middle of October to the middle of November, the thermometer may range, by day, from 50° to 60°, the latter with sunshine; and at night from 40° to 45°.

Now, I take it as an essential point in the matter, that there be constantly a little ventilation during the night; this is my practice, and has, doubtless, been adopted through the necessity of having pot-plants in the house constantly, more or less. However, since damps will generate in degree, during the night, I do think, that under *all* circumstances, it will be well to leave a little egress at back; for I contend not for front air at night, neither do I practice it. An aperture or two of only a couple of inches will allow whatever vapours may collect to pass away as generated, and this will prevent any drip from condensed air-moisture, a thing by all means to be avoided. By-the-by, speaking of drip from the roof from condensation, I would strongly recommend to all interested in winter Grapes to use night coverings; it is astonishing what effect these have in averting drip through condensation, which,

indeed, will be obvious to all who look at the question in a philosophical way.

We all know the difficulty of handling roof-coverings during a severe frost; but there is this difference between ripe Grapes in December and pot-plants: the former need not light; the latter may not dispense with it. The Grape-covering, therefore, might remain on for days without injury. Let our readers well consider this, and throw aside all prejudice. In the event of roof-coverings being adopted, a lower temperature, by several degrees, may be used; indeed, after the leaves are fallen, about 35° would suffice; any further augmentation would be simply to disperse damps by creating *motion* in the air. What these Grapes want, is an atmosphere similar to that of a dry sitting-room, and rather too cool to sit long in.

We come now to consider the last of my assumed points, viz., "daily motion in the air." I do not here contend that it is absolutely necessary, in well-constructed late vineries, to *force this motion* by artificial means; although I have no doubt it would be the reverse of prejudicial; but in houses where pot-plants are kept, I have ever considered it indispensable. When we come to consider the amount of gaseous matter which must inevitably arise in a continuous stream from the decomposition of manurial or organic matters, in the compost of plants, stimulated, of course, by warmth and the occasional application of moisture, it will appear obvious, that something beyond the natural dullness of a November and December atmosphere is necessary to disperse such miasma; and artificial heat is, of course, the only means at command.

But the application of this heat requires much caution; it will not do to let your man go on banking-up fires day and night, as a piece of mannerism. These fires, also, must be worked in concert with a system of ventilation, which has for its object the daily dispersion of moisture; and the warming of the walls and solid work of the interior in such a way as to give out as much warmth during the night as will keep out frost; for this is the only object after the leaves are decayed. A distinction, therefore, both in the period of lighting the fires, and their duration, becomes necessary; and this dependent on the condition of the atmosphere outdoors. The judicious cultivator, therefore, "takes stock," to use a trade phrase, every morning early, and gives orders accordingly. If the morning be clear, and a lively wind prevail, a sharp fire for a couple of hours will amply suffice; bearing in mind that the thermometer must not sink below the freezing-point; not that the grapes will not endure a degree or two of frost, but because it is inexpedient to venture. If the day be muggy, rainy, or snowy, the fire must be kept in much longer; and it is occasionally necessary to continue it all night. In the majority of cases, it is far better, however, to have a sharp fire for two or three hours, than to continue for a longer period a dawdling one; for it will be obvious, on a slight consideration, that as rarefaction of the air is the basis of the firing system, or, in other words, the creating an artificial motion in the interior atmosphere, so in proportion to the power applied in the shape of heat will be the motion.

Now, it appears to me, that motion in the air is not only necessary to dispel damp, but as a sweetener or purifier of the atmosphere, for even dry air may be tainted with the effluvia arising from decaying foliage, and other decomposing matters, which the closed interior of a hothouse must ever produce. When, therefore, the fire is well up, a copious egress at the back of the house—the highest level available—should be given; and as to the front, a moderate admission of air at about three equi-distant points, would seem to be better than opening every ventilator or sash a little; the

object being, in reality, to produce an artificial wind, if I may be allowed such a term.

It may here be borne in mind, by those inexperienced in ventilation matters, that, like other things, the greater the demand, the greater or more rapid the supply; therefore, if the object be to create a lively current of air, it will be best effected by a much greater egress than ingress, as to the size of the apparatus through which it is effected, and *vice versa*.

As soon as the berries are in full course of colouring, every lateral, however small, should be stripped clear away; and nothing left, in fact, but the principal or first-formed leaves. If any supernumerary shoots had been left with a view to provide for future contingencies, they should be pruned to the proper point the moment the foliage discolours; as although, in summer, we strenuously advise people to guard against the erroneous idea of stripping leaves, &c., in order that the sun may shine on the fruit; yet, now we advise the very reverse; get sunshine on every berry if you honestly can; the sun has now little power, and moreover, the principal foliage may not now be shaded by any means.

As the foliage decays, constant attention must be paid to removing those leaves which have evidently performed their office; this may readily be known by their general appearance of decay—the “sere and yellow leaf” is a thing of poetry; everybody can understand this. One thing, however, may be urged here; it is frequently necessary to leave the footstalk, merely pinching the leaf itself off. This is done to avoid any violence to the eye, or bud, at the base of the footstalk; for the latter, at least, should remain until it falls of itself; and the shade of the decaying foliage being removed, the cultivator should therewith rest content.

It may not be generally known, that the foliage of the true *West's St. Peter's Vine* is of high importance for dressing-up dessert dishes. We use it here constantly through the winter months. Those who admire what are called autumnal tints will highly appreciate the style of its foliage. It is an almost indescribable mixture of bronze, and yellow, and green; and its effect by candle-light is splendid indeed. I speak here of the foliage when nearly decayed, and at the period when it requires occasional removal from the Vine, in order to admit the solar rays.

To wind up the detail of care requisite in preserving late Grapes, I may observe, that the scissors must be plied about twice a week until the last bunch is cut. Manage how we will, a decaying berry, here and there, will occur, and there is no safety but in their speedy removal. The operator must take care to avoid rubbing the bloom from the berries, for rubbed and mauled berries are a disgrace to the cultivator. We never syringe after the berries are finished thinning, and our Grapes at this time, in consequence, possess a bloom equal to a Plum, and, withal, are as black as the sloe, notwithstanding the late untoward season. I never knew Grapes colour so well as they have done this year.

R. ERRINGTON.

MATERIALS FOR PROTECTING PITS, &c., FROM FROST.

“PLEASE to let me know what would be the best and cheapest covering for a cold pit, forty feet by nine feet. I want it to roll backwards and forwards. Where obtainable, and price?” “How you do abuse the poor bass mats; are you not ungrateful to good old servants?” “Will you just tell me how many gentlemen have authorised their gardeners to get nice wooden-shutters for their pits, at the expense of some six shillings for a moderate-sized light? How many have you got yourself?” “What do you think of Frigi-domo, asphalt,

canvass, glazed or waterproof calico? and what would be the comparative expense, and the best mode of applying any of them respectively?” “We live in the retirement of the country; all sorts of litter are comparatively of little value; could we not use straw mats, thatched hurdles, or neat straw covers, which you promised long ago to let us know how to make, but which I have never seen described?”

These are merely a sample of the enquiries that are made, week after week, as the cold season approaches. I introduce them prominently here, that our manufacturers may see what is wanted in this respect, as well as for the protection of wall-trees, and other tender plants in spring; as anything that can be made strong, flexible, and waterproof, and yet economical in price, will be sure of a very great sale. So far as I recollect, I introduced the subject of protection last week, but a few more points will bear referring to, premising, however, that they are to be received more as hints than injunctions; and that it is no part of the aim of this work to recommend any particular merchants or dealers.

Though the principles of protection have been fully elucidated, we may just refer to one or two for the sake of fresh readers and new beginners. It comes to much the same thing in the end, whether we speak of keeping in heat, or keeping out cold; and yet, I think, the matter would be simplified if we used the former phraseology, and spoke of cold more as a negative than a positive quality. For instance, in a pit, possessing an enclosed atmosphere so many degrees warmer than the external air, there will be a continual radiation of heat from the glass, and every exposed part of the pit, until the internal and external heat become alike. To preserve this heat, we protect the walls, and throw a cover over the glass. It has been shown, that in early forcing the same practice is valuable, not only as a saving of fuel, but preventing tender vegetation being injured by a dry fire-heat, on the one hand; or exposed to the entrance, through lap and cranny, of air nearly as well deprived of its moisture by frost as if it had passed over a blast furnace, on the other. This, unless prevented, will take place even among the residents of cold pits, and all the more prejudicially when filled with watery juices, after weeks of dull, muggy weather, as we have lately had, and are still threatened with. Hence, the care necessary in giving air when the air is dry from frost, many plants being robbed of their moisture, and, consequently, scorched from this cause. But our business, at present, is the keeping in of the enclosed heat. It will be evident that that will be effected only and so long as the covering prevents the glass, &c., from being cooled. The simplest covering, therefore, will be better than none, as it for a certain time will prevent the radiation of heat. When once the covering and the glass together become of the same temperature as the external air, the parting of heat from the interior would go on with great rapidity. If, in these circumstances, we throw a quantity of litter, hay, &c. (if dry, so much the better), over the first covering, the radiation is taken from the glass to the fresh surface; in other words, we compel John Frost to begin his work anew; and we do so every time that by turning and breaking the surface of that litter we thus break the straight line of radiation.

Hence, the material used; the mode of applying it; and the principles that regulate the radiation and conduction of heat; become matters of importance. As a general rule, the absorbing, conducting, and radiating of heat-powers in bodies are in proportion to their density. Thus, a plate of iron exposed to a heating or cooling medium, on one side, or part of a side, would soon be heated and cooled all over and all through. You might wait long before the same thing took place in a plate of wood. A piece of smooth, hard ground, other things

being equal, will be more heated by the sun in summer, and cooled by the frost in winter, than ground turned up rough and full of air. The more porous and open a body, the less its radiating and conducting powers. Thus, a cover made of wool, hair, &c., would retain more heat than one made of vegetable fibre, packed close together; inasmuch, as in the first case there would not only be the interstices between the threads, but every hair would be a hollow tube. The great advantage of a non-conducting material impervious to water, is not only the preventing cold rain getting to the glass, but keeping a porous body from being partially changed into a dense one. In a frosty night, a dry cloth, or a dry mat, elevated a little above the glass, would have a more beneficial effect than a wet mat or cloth clinging to the glass. In the latter case, cover and glass soon become as one substance, so far as preventing radiation of heat is concerned. This takes place not merely on account of their contiguity, but because the porousness of the material has been destroyed by every air opening being solidified into ice, or, at least, filled with water. In the latter case, when the air is not so very frosty, but clear and dry, there is also the loss of heat by evaporation, in addition to that from radiation.

Something would be gained, were it ever kept in mind that the evaporation of moisture from any body produced cold or a diminution of heat in that body. A dry surface, or one such as painted wood, that will not absorb much moisture, is therefore of great importance. Failing that, bodies open in their texture, or that consist of hollow tubes, such as wool, hair, hay, and straw, are better than more close and compact bodies. This will further appear, if what I stated last week of the non-conducting properties of confined air be taken into consideration. It is difficult to completely isolate a body of air between the glass and the cover; but the more it was done, the more perfect it would be. Even when not isolated, this body of air is of great advantage; as not only is there a radiation of heat from the upper surface of the covering, but there is a double process of radiation beneath it; the glass radiating to the cover, the cover radiating back again to the glass. In fact, the same process is going on that prevents the surface of the ground being sufficiently cooled to be *dewed* in a cloudy night of autumn. The cloud is the cover that radiates heat back again. When we enclose a quantity of dry, tubular, porous matter between the glass and the cover, the same process goes on. Hence, I have seen one man keep up heat, with more trouble, and using four or five thicknesses of mats, than another man would manage without any trouble at all, by merely having a cloth or mat on the glass to keep it clean; a little clean litter thrown over it, and a mat or waterproofed covering thrown over all, to keep it in its place, and preserve its dryness. As our friends seem all to make a point of cheapness, in all cases of low pits, where litter is plentiful, and the appearance of the glass no object, the throwing on of this litter, and pulling it down in the morning with the back of a rake, is the cheapest of all, though rather littery indeed in its working. However, many would see no unsightliness where there was a seen and felt utility.

Taking, however, all these matters into consideration, holding the perfect propriety of recommending what we believe to be best, though we may not be able to show that very plan exemplified in our own practice, not forgetting neatness as a calculation about a garden, and looking at expense, not as spread over one year, but over some six or ten years, I still consider, notwithstanding the remonstrances of some friends, *mats* to be the dearest and most littery coverings; and wooden coverings, made of three-quarters or an inch best deal, with a ledge all round, fully an inch deep, to raise them thus farther from the glass, and made to fit close to

each other, as ultimately the cheapest and best. Thus, supposing that for a common-sized light of a pit, say four feet by six or seven, a wooden shutter would cost about 7s.; a good mat, according to the statement of a London nurseryman, the other day, would cost from 1s. 6d. to 1s. 10d. this season, which seems very high. Well, that mat, with plenty of litter over it, would keep out frost, but then that would be unsightly, and a double one, as a cover all, would probably be required. If you commenced now, you might ask, Where these mats were next July? and echo would tantalize you with "*Where*." The same supply would be required the following year; and thus, with double mats, which of themselves would not be one-third so sufficient as the wooden shutters, in two years, if you counted the trouble of tying the mats, hanging them out to dry, &c., you would have pretty well paid the price of a shutter, and have nothing to look at for your money; while your shutter is as good as ever, and takes no more trouble from you than putting it on and taking it off. You say this is not fair, because the mat is *larger* than will cover a common light. Well, then, take the case of our friend with his pit 40 feet long, and 9 feet wide, at least the glass is that width. Now, supposing each mat to be about 7½ feet long, and 4½ feet wide, two of these placed lengthwise will give the width of the pit, and twelve mats would cover it altogether, with some feet to spare at the ends. These, without counting carriage, tying, drying, &c., would cost from 18s. to 20s. These single mats, however, would only be sufficient in a sudden slight frost of a few degrees. To keep out a sharpish frost, you must either use great quantities of litter, or double or triple mats. These mats would be the best things to get in an emergency. Now, suppose you paid as much as 10s. even for a wooden cover for such a wide pit, and that ten of these were necessary, which might be safely calculated upon to last ten years, and longer, if well used, the single mat alone would cost the price of the wooden cover in five years, the double one in two-and-a-half years, and if leaving the litter out of view, we reckoned the small sum of 10s. each year for tying and drying mats, then, as in the former case, the mats would eat up the price of the substantial covering in two years, and never be a good protection after all.

"But as mats are cheap, could they not be rendered waterproof, and thus be made more lasting and effectual?" Yes; but not so as you can roll them well. They must be fixed upon a frame of wood. You could not make a secure skeleton frame of wood, on which to tack the mat securely, under 1s. 6d. to 2s. This, with a single mat, would be half of the expense of a wooden covering. When such a mat, however, is brushed over with tar, and then well daubed with dry sawdust, it becomes waterproof, the frame raises it from the glass, and it will be a good protection for several years; not much inferior, while it lasts, to Asphalt-felt, while the first cost will be from one-half to two-thirds of the felt.

The Asphalt-felt being sold at 1d. per square foot, is consequently 9d. per yard. It cannot, however, be used for the purposes of protecting pits before it is fixed to a substantial frame to slide up and down over the sashes. That frame would cost, at least, from 9d. a yard.

The cover, when finished, would be as nearly as possible two-thirds the price of a wooden cover. I know that with proper care, and giving the upper surface a slight coat of tar every summer, such covers will last a number of years, and be cheaper in the end by far than mats, though at first it be double; and when fixed to a frame, nearly four times the price of the same measurement of the common detached single mat.

It has been urged against all these frame-covers, that sliding them over the sashes injures the paint; and that more than one man is necessary to take them off and put

them on. The first is partially guarded against by two men almost lifting them off and on without sliding; and perfectly so by tacking laths on the sides of the sashes in the winter months, to be removed in summer. The second objection applies equally to mats, unless in very quiet weather; at least, two persons manage them best. Unless the sashes are large, one man can put the cover on, and take them off; but two can slap on a score or two with a rapidity and safety that would make the mat lovers, with all their securing and fastening, stare again.

There are, however, other things, that without the assistance of frames we would prefer to mats. *Frigo-domo* I have had no experience of; but some of my friends, as well as some public societies, speak very highly of it. It is manufactured by Mr. Archer, 451, New Oxford Street, London, in widths of about two yards, at 1s. 6d. the running-yard; the square-yard, therefore, being about 9d. Being made of wool and hair its non-conducting properties may be relied on. When Mr. Beaton next goes to what he calls our own garden, he may tell how it acts there, and the years it is likely to last. It will be seen the price is the same as the felt, while you can have the latter cut or made to any size. There can be no question that the *Frigo* is far superior to the Russian mat.

Then there is strong, coarse canvass-cloth to be got, from 6d. to 9d. per yard, that would last longer, and give you little of the litter of mats. Some years ago, we had some strong, transparent, waterproofed sheeting, from Mr. Richardson, 21, Tunbridge Place, New Road, London, nearly two yards wide, at 1s. the running-yard. This, it will be perceived, is little more than one-fourth beyond the present price of mats. When either raised above the glass, or with some porous substance beneath it, it kept out much cold, because the glass was kept dry. The same maker has a thick canvass at about double the price. Altogether, it lasted with us several years, but it was liable to crack from extremes of temperature. I believe, though I cannot yet speak experimentally, that a stout calico, or sacking-cloth, fixed to a frame in summer, and painted then, with a mixture of tar and oil, would make a valuable covering. In all cases where cloth, canvass, waterproofed or otherwise, was used as a covering without frames, I would recommend, at least, one end of the pieces to be fixed to a roller of wood, about two-and-a-half inches in diameter, less or more, according to the weight of cloth it was to carry, and rolled on these, the covers could be safely carried and stowed without injury. In pits not over wide, you might have these rollers three feet wider than the glass, leaving eighteen inches, or less, at each end. When you have fixed the cloth at one end, then, holding the rest on the roller in your arm, with its end resting on the wall-plate behind, as you walked and made the roller revolve on its end, you would leave the cloth on the glass behind you, just as I described Mr. Russell's mode of shading some time ago. A few loops, or rings, on the side, would enable you to fasten all very securely.

I find the matter has already filled my space; but to redeem a forgotten promise, I will describe the mode I adopt in making neat *straw covers*, as it may suit some, where the material is abundant, and house-labour, in bad weather, not over plentiful. I should prefer good reeds to thrashed straw, but I like wheat-straw drawn in the barn before it is threshed, with the heads cut off, better than either; and where a person may go to their own barn, you may as well have the best for this purpose as the worst. I prefer such straw to reeds because it is finer. I prefer it to thrashed straw, because the tubes of the straw are not bruised and split by the flail, so as to make them receptacles for moisture, and because, the ears being gone, there is little inducement for birds to go a picking and tearing of them. I have had drawn

straw that stood well for four years; undrawn seldom lasted above two years. Of course, if the frameworks were good, they were equally serviceable for a fresh filling with straw, and then the fresh straw, a few nails and string, and the labour, was all the cover cost the second time. The wood used was small trees of elm, not because I preferred it, for it is about the worst for the purpose, but because I *could get it*. Reckoning the value of such timber at about 10d. per solid foot, the expense of sawing into three quarter-inch boards, at 3s. per 100 square feet; the expense of straw at 9d. per truss, a truss making more than two covers six feet by four; the value of nails and string, and the labourers' time and making each cover of the above size, would cost about 3s., perhaps a penny or two over: but then that cover would be as serviceable as a double mat, stretched on a frame, and as good a safeguard against frost as those lying on the surface of the glass, while, in renewing them, besides labour in bad weather, the chief expense would be about 3d. or 4d. for the straw, even in dear seasons like these.

The following is the simple mode adopted, say for a cover six feet by four. Three pieces are cut out the requisite length, and about three inches broad. I have said the wood is three-quarters-of-an-inch thick. Two of these are placed at the necessary distance from each other, so as to form the sides of the cover, and it is essential that the outsides of these be quite straight, so that one goes close to another, when covers are placed side by side. The other third piece goes in the middle. Care being taken that these are placed square, and at equal distances. Seven cross-pieces four feet in length, and from one-and-a-quarter to one-and-a-half inches broad, are nailed on the three longitudinal ones, one at each end, and the other five at equal distances, in the space between. The cover is then reversed, the side having the cross-pieces being placed downwards. Some good straw is then shaken longitudinally, so regularly, that no ends protrude beyond these cross-pieces, and then enough is shaken on, regularly, by mixing tops and bottoms, until when squeezed firmly together, the straw will be fully three-quarters-of-an-inch thick. This done, I used to fasten down the straw with other transverse pieces opposite to the others, but I found two inconveniences from this. First, the cover was made *heavier*, and, therefore, exerted more strain on the three longitudinal pieces, when moving the cover; and, secondly, these transverse pieces on the upper side prevented the rain going freely off. We now, therefore, use only two transverse pieces on the upper side, one at top, and one at bottom. The straw is fastened down opposite the other five transverse pieces with cord or rope yarn, fixed by a tack to the side piece, then to the middle piece, and then to the third longitudinal piece. As however tightly this cord be drawn, the straw between the longitudinal pieces would be apt to get loose and baggy in the middle, on each of these transverse strings, and at equal distances from the longitudinal pieces, four pieces of small cord are placed over the string, taken through the straw, and firmly tied round the transverse pieces of wood opposite. To prevent chaffing there, a slight mark is made with the saw on these transverse pieces, and in these the cord is embedded. The upper side is then dressed, and looks not only nice and smooth, but by means of this system of tying is held firm and secure. It will be seen, that the cross-pieces of wood below keep the straw at a uniform, safe, and beneficial distance from the glass. When the cover is thus finished, and the season of the year is such that there is hope of its being quickly dried, the upper surface, straw, and strings especially, are brushed over with thin tar, and over that is then thrown some dry saw-dust—all that does not adhere being shaken off.

In severe weather, we go round and stick a little hay or litter in any openings at back or front, between the cover and the glass. When very severe indeed, we throw a little litter all over them. I look upon these as far superior in usefulness and economy to mats. I do not consider them so good as wood, or felt, &c.; but when the whole material is lying, as it were, at your elbows, the expense is not much felt, especially when a good part of the expense is for labour when men could not work out-of-doors.

R. FISH.

THE ANEMONE.

(Continued from page 45.)

TAKING UP AND STORING THE ROOTS.—In wet summers it is difficult to get the plants sufficiently at rest to take up and store. The bulbs are very full of juices in such a season, and keep growing on. This, for the single, common varieties, is, perhaps, not of much consequence, especially if they are planted in patches in a mixed border; but the fine, double varieties should be taken up annually. To induce a perfect state of rest, the bed should be covered, as soon as the general bloom is over, with canvass or mats, to keep off the rains that may fall whilst the leaves are decaying. As the foliage decays the real roots will decay also, the bulbs will then gradually mature. When the leaves are quite shrivelled and yellow, take up the bulbs immediately, cut off the leaves close, and place the roots in a dry, shady, cool room, to dry gradually. Just before they are perfectly so, they should be looked over, and any soil, decayed stems, or leaves, removed. If this is delayed till they become hard and brittle, there will be great danger of breaking off some parts of the bulbs, which would be injurious to them, because the broken part would be in danger of being attacked with mildew. If the double varieties are named, they should be kept in separate drawers, or paper-bags, correctly named or numbered. The only care they then require is to keep them in a dry, cool room, till the planting season comes round again. It would, however, be desirable to examine them occasionally, to see if there is any appearance of decay or mildew on any of the roots. Should that be the case, all of the roots so diseased must immediately be separated from the stock, cleaned, and fresh dried, and afterwards put into separate bags to prevent infection.

FORCING.—The Anemone may be forced so as to have it in bloom in the first month of the year, but the roots are much weakened thereby, and will require a year's growth in a nursery-bed to recover their strength. Choose for this purpose the largest tubers; place one in a five-inch pot early in October, potting them in a rich, sandy soil, covering them about one-inch-and-a-half deep; place them in a cold frame or pit for a month, then give a gentle watering, and bring them into a good greenhouse, placing them near the glass. There will be quite heat enough for them in this house to bloom well in January. They will not bear a warmer house. Too much heat would destroy the bloom. Give them due supplies of water; remember, they have not the deep, rich soil of the border to bring forth their blossoms, and, therefore, they require liberal waterings. As soon as the bloom is over reduce the water gradually, and finally lay the pots on one side, in a place where the early frosts will not reach them; and when the foliage is quite decayed, take out the tubers, and dry and store them in the usual way. Plant them, at the usual time, in a prepared bed, in some retired part of the garden; prevent them from blooming, should any appear, and the year following they will be strong blooming bulbs again. Or if this should be thought too much trouble, throw them away as soon as the bloom is over, and purchase fresh roots for forcing. They are cheap enough.

PROPAGATION: BY SEED.—Such cultivators as desire to raise improved double-flowers should be careful to save seed only from semi-double blooms, with well-formed flowers, and bright, distinct colours. As the seed ripens at different times, and is downy and very light, it is in danger of either falling to the ground, or being blown away with the wind; therefore, it must be watched, and carefully gathered, daily, as soon as it is ripe; but as there may be some moisture on the downy parts, it is advisable to spread the seed on a sheet of paper, lay it in a window facing the morning sun for a few days until it is perfectly dry; then put in a bag, and keep it dry till the sowing season arrives.

The common single Anemone seed may be sown, immediately it is ripe, in a prepared bed in the garden; but seed saved carefully, as described above, is deserving of a little more trouble. Have a one or a two-light box, according to the quantity of seed saved; take out the soil, and prepare the bed exactly the same as I directed for the full-grown roots; make the surface very smooth. Let this be done about the middle of December. Place the lights on, giving air every fine day till the surface is moderately dry; then prepare the seed for sowing. The method to do this is to rub it with the hand for a considerable time amongst some dry soil. This should be done until the seeds are divested of their downy covering, and separated from each other. If this is not effectually done the seeds will adhere to each other, and the plants will come up in patches, and there will not be room for them to form bulbs. When the bed of earth is ready for the seed, and that is well rubbed, separated, and mixed with the earth it has been rubbed amongst, then choose some fine, mild day, about the middle or end of January, and sow the seeds evenly and carefully on the bed of earth in the frame; then have a fine sieve and some dryish light soil ready; sift a very thin covering evenly over the seeds, not above the thickness of a shilling, give a gentle watering with a very fine-rosed garden pot, shut up the frame, and let it be kept close, excepting during bright sunshine on mild days, when a little air may be given. *The surface should never be allowed to become quite dry*, but should be kept moderately moist. In hot sunshine, it will be advisable (in addition to the giving of air) to shade this seed bed with a mat until the plants have made two or three leaves. As the season advances, give more air and water, and afterwards expose them daily to the full light and sun; but as long as there is any danger of frost, shut them up at night. Keep them duly supplied with water until the leaves decay; then sift two inches of the surface through a very fine sieve, and carefully pick out all the young small bulbs. Plant them early in September, in the open bed, and treat them afterwards exactly like the old bulbs, until they flower, which will generally happen the second or third year.

BY DIVIDING THE ROOTS.—Anemones are easily increased by breaking off one, or more, of the little knobs of the full-grown tubers. These may be planted and managed exactly like the old-established roots, and will many of them flower the following season.

T. APPLEBY.

LIST OF STOVE FERNS.

(Continued from page 46.)

ASPLENIUM ELONGATUM (Lengthened).—A pinnated, beautiful, scarce Fern, from the Phillipine Islands. The leaves are blunt, and rounded at the apex. The fronds grow about a foot-and-a-half long. Imported lately, by Messrs. Veitch and Son, from Java, and presented by them to the Royal Gardens at Kew.

A. FALCATUM (Sickle-leaved).—An East Indian, beautiful, evergreen Fern, with stout, leathery leaves,

deeply cut at the edges. The fronds frequently, when well-grown, reach two feet high. It seldom can be propagated by division, but grows freely from seed.

A. LETUM (Gay).—A bright green, erect-growing, pinnated Fern, from the West Indies, of great beauty, growing two feet high. The rootstock is erect, and sometimes branching, by which it may be increased. It loves light, open, rich soil, and liberal pot-room.

A. OLIGOPHYLLUM (Few-leaved).—A Brazilian Fern, with oblong, lance-shaped leaves, pinnated on the frond, which attains a foot in length, and, therefore, may be considered a dwarf Fern fit to grow in a small collection. The leaves are thinly placed on the frond; hence its specific name. The rootstock creeps, and, therefore, may be increased by division.

A. PULCHELLUM (Fair).—A West Indian, pinnated, dwarf Fern, with slender, elegant fronds, about nine inches long. The leaves, or pinnæ, are lance-shaped, rather curved. The seed-vessels are long and narrow, and of a bright brown colour; very beautiful. It is one of the most elegant Ferns of the genus that require stove culture; not easily increased by division.

A. PUMILUM (Dwarf).—This is another West Indian little gem, but is exceedingly scarce in collections. It seldom grows more than a few inches high, and has been but lately introduced from the Parisian gardens. The fronds are of triangular shape, a rare form in this genus. The stems are hairy, and the shield-case is hairy also. As soon as this little gem is sufficiently increased it ought to be in every collection. The rootstock is creeping, and, therefore, it may readily be increased by division.

A. PLANICAULE (Smooth-stalked).—An East Indian, common Fern, in our stoves; common, because it is so easily increased by its creeping rhizomas. It is, however, worthy of cultivation, on account of its beautiful lively green foliage. The stems are dark-coloured; the fronds bipinnate, slender, and somewhat triangularly formed, growing a foot-and-a-half high, rather erect, and thickly set on the creeping rhizoma.

A. RADICANS (Rooting).—A Cuban Fern; grows a foot-and-a-half long. This may be distinguished by the termination of the frond being devoid of pinnæ, and forming a tuft that produces roots first, and afterwards leaves, forming a plant if it touches the soil, and also by the black stems.

A. RACHIRHIZON (Rooting).—(The *Asplenium rhizophorum* of Gardens). This is a beautiful, dark green species; is worthy of general cultivation; like the preceding species, it is easily increased by the rooting apex of full-grown fronds. All these rooting Ferns should have the end of the tuft bearing frond pegged down either in small, separate pots, set conveniently near the parent plant, or on the soil of the pot containing the plant. The first is the best method, because then the young plant, when established, will not require to be taken up and potted, but will have its roots undisturbed in its little pot till it needs more pot-room.

A. SERRA (Saw-leaved).—A pinnated Brazilian Fern of great beauty. I have grown it, in a ten-inch pot, three feet high, and as much through, with twenty fronds in the pot. The fronds rise first erect, then gracefully curve downwards; the leaves are of a beautiful light green, shining, and very regularly deep cut at the edges, like the teeth of a saw; the stems are thickly covered with narrow brown scales, and stand upon a thick, scaly, creeping rootstock. Easily increased by division.

A. SERRATUM (Cut-leaved).—The leaves of this noble Jamaican Fern are simple. Two feet long, and four inches wide in the broadest part, and cut at the edges. They form a circle on an erect rootstock, similar to the well-known birds-nest Fern. Slow of increase by division, but grows freely from seed.

A. VIVIPARUM (Viviparous).—This is an elegant narrow-

leaved, thrice-pinnated Fern, from Mauritius, of a lively green, growing not more than a foot high. It produces living plants at the end of each frond, by which it may be readily increased, in the same way as *A. rachirhizon*, described above.

A. UMBROSUM (Shady).—This is from Madeira, and is the *Allantodia umbrosa* of R. Brown. It requires a moderate stove, though it will exist in a warm greenhouse. It is rather a large Fern, growing from three to four feet high. The fronds are thrice pinnated; the leaves are lance-shaped, and rounded at the top. The frond-stem has a few dark scales at the base, and the rootstock is short, thick, and creeps close to the soil.

BLECHNUM.—The species belonging to this genus may easily be distinguished by the seed-vessels or sori being generally arranged in lines on each side of the midrib, or the leaf. Our common *Blechnum spicant* is now separated from the genus, and transferred to *Loniaria*, because the fertile fronds of that genus are contracted, which is not the case with the true Blechnums. All the genus, as now constituted, are natives of the tropical parts of the world; and, consequently, require a warm, moist stove. They are easily cultivated, not being liable to perish through mismanagement, unless neglected watering for a long period.

B. AUSTRALIS (Southern).—A pinnated Fern, from the Cape of Good Hope, of considerable beauty, easily increased by division. The fronds are about a foot long, pinnated; the leaves are sessile, that is, have no foot-stalk; slightly sickle-shaped, running out into a lance-shape. The end leaf is entire, and lengthened out like a tail. It is a good Fern, worthy of general cultivation, and by no means scarce.

B. BRAZILIENSIS (Brazilian Blechnum).—I once had a large crop of this fine Fern, from seed sown on a rough sand-stone, placed under a hand-light amongst moss; it seldom produces offsets to increase by division. The fronds frequently attain four feet, or more, in length; they are pinnate, or winged, and each wing, or leaf, is from seven to eight inches long. The caudex, or stem, on which the fronds are placed circularly, is, when fully grown, two feet high. By this description it will be perceived that this is a large, noble Fern, requiring a tolerably large stove to show it off to the greatest advantage. Give plenty of pot room, moisture, and heat, and a young plant will, in three years, attain the above magnitude.

B. GLANDULOSUM (Gland-bearing).—A Brazilian Fern. Comparatively, this is a dwarf species, the fronds reaching only a foot in length. They are pinnate, with very narrow pinnæ, sharp at the end, and of a pale green. The fronds are set upon a creeping rhizoma, or root stock, by which it may be increased, if divided with a portion of roots to each division. T. APPLEBY.

(To be continued.)

COTTAGE GARDENS AND THEIR PRODUCTIONS.

UNDER this head may be classed the most useful productions which the gardens of the more opulent can furnish; for it is not too much to say, that the quality of many of the articles furnished by the industrious cottager is quite equal to that of his more wealthy neighbour, as all who have witnessed the exhibition of many of our provincial shows can testify. Now, that this arises from any want of skill or perseverance on the part of the cultivator whose operations extend over a large breadth of surface, we are unwilling to affirm; but it certainly is a matter of which the humble cottager may be well proud, when he returns home and finds, by the remarks of the public, that the Onions, Potatoes, Carrots, &c., which he sent to the Horticultural Show of his county town, were

pronounced to be as good as those from any nobleman's or gentleman's garden that was there; and as most of our provincial shows have, of late years, given a liberal proportion of their funds in cottager's prizes, it is certain that the benefits accruing to the labouring population, have been, in like manner, encouraging to all around them; and, having had some little experience in adjudging and distributing prizes to cottagers for good cultivation or meritorious production, a few words on the subject may not be here out of place.

In the first place, it requires some discrimination to define the precise boundary of the term "cottage garden," and the sense in which it ought to be taken by those having the management of country shows; for it not unfrequently happens that the best prizes are monopolized by individuals having little claim to that character, in the sense it was intended to be understood—as tradesmen of easy circumstances, with means and opportunities far beyond that which the poor day labourer can command. Hence, some distinctive line seems necessary; but, supposing that to have been satisfactorily effected, and the productions of each brought to the table, it is then not difficult to distinguish the good from the indifferent; but in many instances, a liberal distribution of "extras" is attended with great benefits; for the value of a prize to a cottager is not merely regarded as the intrinsic worth of the article or premium awarded, but the honourable distinction which it confers; and supposing a cottager from a rural district receives a prize for some vegetable, or fruit, the fact of his doing so spreads abroad in the neighbourhood, so as to cause, probably, some of his more opulent neighbours to pay him a visit, and, consequently, to maintain his own credit, he takes care to have his garden in as good order as possible to receive such visitants; besides which, his more humble companions are often induced to emulate him, and a decided improvement in the culture and general management of each is the result. Now, this comes so often under our notice, that we have almost ceased to regard it as remarkable; and those who will take the trouble to look into the gardens of some of the most industrious and intelligent of the class, will see the nice state they have brought their respective holdings to; and the attentive observer will notice the care they have bestowed on many vegetables, so as to have the best and finest variety of each in their possession.

In the garden of the cottager *Celery* is seldom seen in that hollow condition which we call "pipey;" *Lettuces* refrain longer from going to seed, by that being grown only on the best plants, and then selected with proper care for the purpose; and his *Cabbage* plants, in which he takes great pride, seem to come into use sooner than anything else in this way in other gardens. Now, as this is all done without any extraordinary aid, it follows that the treatment for out-door plants is, after all, not entirely performed when the plants are put into the places they each are expected to occupy, for the saving of seed forms an important feature in cottage rural economy, and it is rarely indeed that seeds so raised fail to give universal satisfaction, by their possessing all the qualities required of them. This, therefore, in a measure, enables the cottager to compete with the larger grower, who caters for the table of the affluent, by the warranty which each article sown can carry with it; and this is fully borne out by the genuineness of the various crops they grow, equalled only by that of the "market gardeners," whose means being usually directed to the growth of a very few articles each, they necessarily become proficient in the respective culture that each requires, as well as good judges of their quality.

No one who has witnessed the productions of a "Cottager's class" usually presents at an Horticultural Show, in a district in any degree favoured, must feel impressed with

the belief that the gardens which furnished such must be well-managed; and no doubt but they are; for the close cropping to which every inch of ground is subjected, may well excite surprise how things so well-grown could be turned out of such a crowded place. The explanation lies in a nutshell. *Industry accomplishes it all.* Half-a-dozen good *Cabbages* can, by judicious management, be grown on the same space that four, under ordinary care, would find a difficulty in coming to perfection, though the soil be the same in both cases; but the one thrives, and derives its nourishment from the careful hand that feeds it almost daily; the other has to struggle for existence amongst such elements as nature, or chance, throws in its way. The soil is never stirred around the roots of the latter to enable them to obtain a share of the invigorating influences of fresh air; no grateful draughts of liquid-manure to cheer them on; even the very food that nature intended them to have may be denied them by a crop of weeds robbing or cheating them of what ought to be their due. These things all tell in the main, and the skilful and industrious cottager, whose children are often seen in the lanes picking up the dung dropped by horses in travelling along, and carefully depositing it in some snug corner in the garden, will assuredly attain a degree of perfection in culture which it would be vain to look for in the more careless, and let-things-alone man, who prefers to smoke his pipe, and discuss local affairs with his neighbour at a beer shop.

The impulse given to meritorious gardening by the various provincial societies who have directed their attention that way, has certainly been instrumental in producing a superior class of vegetables amongst that important community, "the labouring poor," to which such things are of the most consequence; and, it is not too much to say, that the improvement in this class has been more marked amongst the others; and of late years, articles have been added to the cottager's productions, which, at one time, was only thought as belonging to the gardens of the aristocracy. *Celery*, *Asparagus*, and *Cucumbers* have not always been occupants of the cottager's allotments; to say nothing of flowers and fruits of all kinds, which this climate will perfect without artificial heat.

All these acquisitions tend to improve the moral position of the labourer, and when the cultivator discards the more common and useful vegetables out of his little plot, to make way for a bed or two of fancy flowers, it is assuredly unfeeling to tell him to keep to more useful articles; for, as the culture of Flowers tends to elevate the mind, it is impossible for that hobby to be ridden too hard; it therefore becomes all those whose means admit it, to patronize and assist their poorer neighbours, in the way of embellishing their little plots, as well as rendering them more productive; and a few spare plants, at "bedding-out" time, with now and then a cutting of anything that will strike freely, is always duly appreciated by the cottager, and it rarely happens that any labour it may cost is begrudged by them.

Another mode of encouraging the poor, is frequently to visit and look over their little "holdings," and any advice, or instruction, that may be given them, is always acceptable, and generally acted upon; besides the encouragement which is given when their management is such as to deserve commendation. There are many other ways of encouraging successful cultivation of their home gardens; while, perhaps, the proper care and attention to what is termed "garden allotments," is scarcely less recommendable; only the latter, being often confined to the more hardy and robust vegetables, is less interesting than those little gardens which surround the cottage homes of so considerable a part of our rural population; and which, by their diversity of produce, present an important feature in such places, while it is

too true, that many a sylvan spot, which the traveller would be glad to see exhibit the skill and industry of its occupier, presents a mass of confusion and dirt, as offensive to the eye as it is derogatory to the national character. That much may be done by the encouragement of the wealthy to reform such places, we verily believe; and we trust the time is fast coming, when these disorderly gardens and homes of our rural population will disappear, and the smiling portals diffuse the fragrance of the best class of climbing plants, as well as the approaches thereto being decorated by choice flowering plants. Such a consummation would in no wise impair the utility of the working man; but, by adding to his comforts, elevate and refine him, and teach him to study and enquire into pursuits, which, in his former unlettered condition, he never dreamed of.

J. ROBSON.

CULTIVATION OF WHEAT ON LOAMY LAND.

(Continued from page 48.)

As the cultivation of Wheat upon loamy soils, as well as that of others, will be greatly influenced by the preceding crop, it is necessary to consider the most usual course of cropping, and how far any departure from it may affect the culture for Wheat, and also the produce. There is no doubt that the Norfolk, or four-course system, viz.:—1st. Turnips; 2nd. Lent Grain; 3rd. Clover; and 4th. Wheat;—is still the most prevailing practice upon loamy land, but circumstances have arisen, and still exist, which has justified a deviation from it. For instance, upon well-farmed land in a high state of fertility, induced by artificial feeding and manuring, the substitution of Wheat for Lent corn has been found to answer a good purpose, which method will cause Wheat to follow Turnips, upon such a portion of the land as can be freed from the latter in sufficient time, either by removing the crop, or feeding it upon the land by sheep.

Now, I am aware that this alteration has many opponents; but, from my own experience in the matter, I must say, that it has been attended with success when fairly carried out; for the produce of grain does not so much depend upon the period or distance of time between the sowings of Wheat, as it does upon the judicious cultivation for the crop; in proof of which, I have invariably found, when the seed has been put in under favourable circumstances, and the land rich enough to produce a full crop of straw, that the result in grain depends upon a favourable season; that is to say, a dry, hot summer gives a good yield, whilst a dark and wet season proves the reverse. It must, however, be admitted, where this system has been continued, that the grain has been lighter in some seasons, not weighing so much by two pounds per bushel as when sown only once in four years.

In preparing the land for Wheat after a crop of Turnips, whether the crop has been pulled, or fed upon the land, it is not desirable to sow early; any time during the month of November is best, if the weather proves favourable; for although we usually have heavy rains during that month, yet they are necessary to make land plough close and heavy, in order to counteract the

loosening effect of the tillage for Turnips, which is unfavourable to the culture of Wheat. The land should always be sufficiently manured before sowing the Turnips, because the carting of manure upon the land for Wheat, at this advanced period of the season, is always injurious (from the treading the land receives), often difficult, and sometimes impossible to accomplish. It is not advisable to plough the land long before it is intended to be sown, as it is sometimes difficult, at this late period, to get on the land. I, therefore, recommend that the ploughing and seeding of the land should take place on the same day, and that the horse labour should be apportioned in such a manner, that as fast as every ridge is ploughed it should be seeded, either by the drill, or broadcast, and finished off by the iron harrows; the season will then be secured, for in case a fine day is selected, the land never works so well for Wheat as it does directly after the plough, and should rain set in at any time of the day, by adopting this method, the season may be completed at intervals, without danger or risk.

Upon this land the ridges should never be made small, not less than from ten to fourteen turns with the plough; many furrows not being necessary to draw off the water, for whether the loam rests upon a subsoil of stone, brick-earth, or gravel, the water never lies long enough to damage the Wheat; therefore, small ridges, involving numerous furrows, would only prove a drawback upon the crop.

The late period of sowing the land, after Turnips, renders a little more seed necessary, and the best quantity is about ten pecks per acre; drilling is to be preferred, in order that hoeing may take place in the spring; for when Wheat is sown after Turnips, it is much more infested with weeds than when it follows Clover lea. As it is usual to seed the Wheat with Clover and Grass seeds, they may be hoed in at the same time as the weeds are destroyed.

On loamy land, the seed should be the produce of chalky or gravelly soils, a change being very desirable. Wheat of any sort should never be sown without being steeped, to prevent smut and disease of the grain; the old method was to steep in brine, and dry with lime; it is, however, found much more beneficial to use the following steep:—Take one pound of blue vitriol (sulphate of copper), and dissolve it in four gallons of water, which is sufficient for one sack of Wheat; the steep should be applied on a brick or stone-floor, and the Wheat turned with a shovel a few times, until every grain is thoroughly wetted. The Wheat should then be thrown up into a conical heap, and in a few hours it will be dry enough for sowing.

This soil, when in good condition, should be seeded with the superior kind of white Wheat, unless the climate or situation is unfavourable. The southern or eastern counties may be reckoned most favourable for the growth of all varieties of white Wheat. The best sorts of Wheat for this land, are the Morton's Red-strawed White, Chidham, Fenton, and Hunter's, these being all superior sorts of white Wheat, and unless, in

some districts, where the sale for white Wheat is limited, may be grown with great advantage; for although the grain is superior in quality, yet they will likewise produce large crops, the straw being stiff and strong, and not likely to be lodged easily from the effect of high cultivation.

JOSEPH BLUNDELL.

(To be continued.)

ALLOTMENT FARMING.—NOVEMBER.

AFTER one of the most extraordinary seasons on record, as concerns the soil, and all proceedings connected therewith, we are at last approaching the confines of the year, and it may be well to take a retrospective glance at bygone affairs, as bearing somewhat on future proceedings. The quantity of rain which has fallen through the year has far exceeded the usual bounds, and this not in one district alone, but, I believe, nearly all over England. This has, of course, had a constant tendency to impede all cultural operations; and to give the past summer a name somewhat in character, it would not be amiss to call it—THE WEED SUMMER.

It is well known that ground constantly covered with weeds, and the scum of mosses and other minute or microscopic vegetation, cannot undergo the necessary degree of airing, or, in other words, cannot receive, with a proper degree of facility, the beneficial effects of the atmosphere. Here, then, is the position of affairs with regard to future progress; our gardens have all undergone bad cultivation, for this summer has verily been a leveller; the most ardent cultivator, and the most intense weed-hater, have been thrown nearly on a level with the sloven.

This is certainly an extreme state of things; but I can vouch for its being true to the very letter in this part of the north. What, then, is to be done to recover our lost position? This is a consideration worthy of much care, during this month especially. In the first place, let me repeat what I have so frequently urged, that every plot of ground from which crops have been removed should receive spade culture immediately, ridging the soil as high as possible, and digging deep. This is the only way to recover lost ground, and this, of course, requires extra efforts, without which, indeed, another summer may prove worse than the past. *Drainage*, indeed, that chief foundation-stone of most farming or gardening improvements, should even claim a prior consideration to the former; and here, we should hope, that those benevolent persons, who, out of a philanthropic and national feeling, have generously taken into consideration the position of the workman, by pushing forward the allotment system, and by granting land for the purpose, will stretch forth their hand yet further, and endeavour to assist in the matter of drainage; for although every other process connected with these plots may be readily accomplished by the workman and his family, by extra assiduity, yet in the matter of drainage it can scarcely be expected; both material and cartage are hard-to-come-at commodities with the ordinary allotment holder. Hence, we may find, in many cases, these evils are not looked fairly in the face, and the importance of drainage is lost sight of.

And, now, the first crop to which we may pay a little consideration is the POTATO. Really one approaches this question with a mixture of doubt and sorrow. I must here report the condition of the Potato crop, together with its future chances, as decidedly worse than in 1845. We can by no means report a smaller loss in the aggregate, through this part of the country, than eighty per cent. This is astounding enough to the most nervous alarmist; and a grave consideration it is. Truly, it is well that trade has been brisk, and the prices of other bread stuffs comparatively low, or who can imagine the consequences? I have taken some pains to ascertain the conditions of soil, seed, &c., together with the previous rotations pursued on plots notorious, either for extreme failures, or for unusual success, and all my evidence tends to one point, as a conclusion, viz., the less manure, and even the less organic matter in the soil, the greater the chances of success. I have no doubt that some of our readers will start at the term organic matter—

by which I mean simply the turfy material of bogs—and will be ready to exclaim—Who, then, can grow a crop to pay? This is a very natural enquiry, indeed, and is purely a trade matter; but I am speaking of the physical health of the Potato, with a view to its restoration. I have lots of evidence about me to show that this is the case, and I am of opinion, that before the disease can be got rid of, which will not be in one year, that the dry gangrene must, of necessity, succeed the wet one. I speak not here in a scientific way, I merely hint that there are two kinds of decay in the foliage, at least, distinguished rather by their comparative virulence, than by any specific character. Then, as I take it, poverty of soil will suffer them to assume the dry gangrene, and rich and manured soils the moist.

I may here tell our cottage friends, that by this clumsy term gangrene, I merely mean the decay or mortification which destroys the haulm long before its natural period. Some of the very best crops of Potatoes in this neighbourhood are produced through the agency of guano alone, on land which is what is practically termed worn out; that is to say, land which has had so much of the plough, and so little manure, that there is little organic matter left in it. Now, this I know to be a fact, and an extraordinary fact, too, as bearing on the Potato disease. I shall have much more to say about this on another occasion, for I verily believe, that few can see why this should be so. To conclude about Potatoes, I can only advise care in the seed. Select well from the poorest of soils, dry them directly, even slightly green them, and keep them dry and cool as possible, short of freezing. This, I believe, is sound advice in the present crisis; but it would be well for our scientific men, who have skill and leisure, to try various disinfecting processes, for this is not a bad way of commencing to grapple with the question.

STORE ROOTS.—All store roots intended to be lifted in autumn should be in their winter quarters by the second week in November. I have before so often suggested modes of keeping, of pitting, &c., that I need scarcely repeat them here. Again, I say, dryness is the great secret, but not the dryness arising from artificial warmth.

Our readers must remember that there are but two ways in which they may lose ground in these things; the one in sprouting; the other by rot; and dryness is antagonist to both. Strange to say, I have *Mangold Wurzel* now, of last year's growth, as fresh as when taken out of the soil. This has been kept in-doors, in a dry shed, lying piled in a hole where no damp could ever reach, and the base of which is, indeed, complete dust. This is truly a wonderful root; surely it must be adapted for long sea voyages; if it could be worked up into food for seamen, it would, in the present state of things, surely be most desirable.

Sweedes, of course, may remain out much later, as they have made such poor growth this year, especially as a secondary crop. Indeed, these will endure most moderate winters. *Parsnips*, too, may, as before observed, lie all the winter, merely spreading a little manure over their crowns.

RHUBARB.—Those who want early *Rhubarb* should cover the crowns the moment the foliage is removed; indeed, cut it and remove it sooner on purpose. Litter, six inches thick, will keep the ground-heat in, and this is the point to aim at.

In conclusion, let me advise strict attention to an early clearing of the soil of all exhausted crops, in order that all chances of corruption and stagnation be removed; and that the soil be instantly broken up as before advised. Whatever residue be collected, let it be burned, or rather charred; trimming hedges, gutter sides, and collecting all possible rubbish, in order to wind up the old year by system, and acquire a renewed vigour for a fresh campaign.

R. ERRINGTON.

APIARIAN'S CALENDAR—NOVEMBER.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

THE SEASON.—Much has been said of late years about bad seasons for bees, but of all the bad ones this has certainly been the worst; for I hear but one sad lament from all

quarters in the Bee way, and this has become so serious, that people begin to give them up in despair; stocks are dead and dying in every direction, some have swarmed, and alighted, in their usual manner, so late as the month of October, but upon inspecting the hives they left, it has proved to be a complete desertion, for not a bee nor a particle of honey was left in them.

PRESERVING HIVES OF COMB.—Where the Bees have deserted their hives (and it is swarms of the present year that have generally done so) the combs should be carefully preserved by placing the hives in some dry spot out of the reach of mice or insects, for the purpose of hiving swarms into them in the spring. The advantages afforded to a swarm, by putting it into a hive of fresh clean comb, are scarcely to be credited by those who have not experienced it.

WASPS.—I find that Wasps have been unusually abundant this year, in some places, so as to render feeding quite impossible, and so severe have their attacks been upon weak, and even upon populous, hives as to destroy them entirely.

FEEDING.—I think that after this sad tale it will be unnecessary to urge upon those persons who are so fortunate as to have a few stocks remaining the necessity of feeding, for without it, I feel assured that very few will survive the winter.

UNITING STOCKS.—Where there are many weak stocks in the same apiary, which I fear is not uncommon at this present time, to avoid the trouble of feeding them separately, as well as the risk of carrying them through the winter, it will be better to unite them; the methods are various, some persons prefer simply driving, others fumigating with puff-ball, bissus &c, and some even with chloroform, all of which have already been given in the pages of THE COTTAGE GARDENER.

THE CULTURE OF A ROOD OF GROUND.

NOVEMBER.

THE operations that I have noticed for October are also applicable for this month; and if what was then recommended to be done has been neglected, it should be attended to the earliest opportunity. No time should be lost in securing all the root-crops from frost during the winter; and every leisure hour should be occupied in manuring and digging all vacant ground, so that it may be in readiness for early spring cropping.

If early *Spring Cabbages* have been neglected to be set out in October, no time should be lost in getting them out as early as possible this month, in the manner described in my notes for last month. Where a rood of ground is highly cultivated, and cropped with a variety of garden vegetables, &c., much more is necessary to be attended to this month than I have attempted to describe; but this is a business I leave to more competent and experienced hands that have been properly trained to the calling.

POULTRY.—In my notes for September, I mentioned the number of chickens our Shanghae pullet had produced us; and also, that I should, in a future paper, give some account how we managed our *Fowls*. I, therefore, shall endeavour to give a brief description of our system.

I have previously stated how we commenced with our poultry, by being presented with a pair of chickens, of the above breed, by E. George, Esq., of Chaldon, Surrey; and from this pair alone we obtained our stock of one hundred and eleven chickens. The plan we pursued in hatching them was by placing the eggs under the common hens; and, in order to prevent any interruption by the common fowls which we had previously kept, we had them sit in a shed adjoining the house by themselves; the nests we prepared for them were some old cast-off bee-hives, which answered the purpose exceedingly well; and, the eggs of this variety of fowl being invaluable, we took every precaution to prevent their being broken, or the hens forsaking them, or being off the nests too long, fearing the eggs might be spoiled from the severity of the weather in the latter part of February and the beginning of March; and to prevent a sitting being spoiled the hens were regularly taken off every morning, and fed abundantly with a variety

of food, such as tail-wheat, barley, and barley-meal, mixed with boiled potatoes, with plenty of clean water to drink. We allowed them to be off from ten to fifteen minutes, but never longer; and never left them till we saw that they went to their nests, and settled properly on their eggs. If they showed any inclination to be restless, or wanted to leave their nest, we used to place a board over the hive to prevent their doing so (taking care to leave sufficient ventilation), and in taking this precaution, we succeeded in hatching every sitting of eggs that we placed under them, and very rarely we lost a chicken, although the weather was, during the whole of the above period, very severe. From inquiry that I had made in our neighbourhood, I was informed that several persons had lost their sittings of eggs, by not properly attending to the hens during the sharp weather; and several instances where they had left their nest too long the eggs were frozen. I was also informed by a gentleman well acquainted with a noted breeder of Cochins, that out of several hundred eggs that were sat on during the severe weather, as above stated, he succeeded in hatching only twelve chickens.

MANAGEMENT OF CHICKENS.—Mr. Trotter, in his "Prize Essay" on Poultry, says—"Chickens, for the first twenty-four hours of their existence, do not require food. During this time they are supported by a large portion of the yolk, which, previous to their breaking the shell, had not entered into their system." This plan we have adopted, and found it to answer exceedingly well—dispensing with the old woman's practice of cramming a pepper-kernel down their throats as soon as hatched. After being hatched the above time, we find they soon begin to pick for themselves, and the food we prepare for them is soaked bread mixed with oat, or barley-meal; and after a few days we give them a little tail-wheat in addition to the above; in this way we find they thrive well, and we have found them to be more hardy and less trouble to bring up than the common fowl; and with proper attention (which is the great secret in the art of rearing chickens), they will grow rapidly, and can be made fit for the table in much less time than the common ones. The best food we find to fatten with is barley-meal moistened with water (or milk, when it can be procured); if a little fat or grease is added it will hasten the process; but as we have, up to the present, found a sale for them for store at better prices than we can make of them for the table, we have not been selling them for that purpose.

From their docile habits, great weight, and shortness of wings, they are incapable of flying; we, therefore, much prefer them to the common fowl, as we find they can be kept in the yard, enclosed with a fence only three feet high. We have kept them in our yard, this summer, with only a common sheep-netting of the above height.

In consideration of their excellence as layers and quiet habits, I am inclined to think they are the best adapted for the cottager to keep, who has but a small space of ground, and would wish to prevent his fowls trespassing in his garden, where they are generally very unwelcome visitors.

BEEES.—I am sorry to say I cannot give so favourable an account of our Bees as our Poultry. From inquiries that I have made in this district (East Suffolk), I find the general complaint is, that the present has not been a honey-producing season; indeed, persons that I know of that have burnt their Bees (for this is the common practice adopted here, although so much condemned by all authors), complain that they have taken no honey. They must have been aware they could not get any by merely feeling the weight of the hive, yet they prefer destroying the Bees in the hives that are light, rather than to take the trouble to unite them to a stronger stock, or to be at the trifling expense of affording them a little honey for their support during the winter, that they might be enabled to repay them ten-fold the following season. In keeping Bees we are but young beginners; therefore I can say but little at present as to any practical knowledge of their management. I can only say of our stocks, that they are very light (excepting one old stock) and will require feeding to support them through the winter, which we intend to do, as we cannot afford to be so extravagant and cruel as to burn them. We want to preserve their lives, with the hope that they will repay us with an abundant supply of honey another season, as a reward for our giving them food when they were incapable of supporting them-

selves. We intend feeding them with loaf-sugar and honey, as recommended in *THE COTTAGE GARDENER* of October the 13th. In the spring we fed them with moist-sugar and ale, and by so doing kept them alive; while a great many in this neighbourhood who neglected to do so lost their stocks.

JOHN SILLETT.

GREY SHANGHAES.

C. H. B.'s remarks, in the last number of *THE COTTAGE GARDENER*, "in explanation" of his wholesale condemnation of Grey Shanghaes in his previous communication, are, as I conceive, so unfair, and, whether intended or not, so calculated to mislead, that, however unwilling to intrude this much-vexed question unnecessarily on your attention, I must beg to be allowed to make one or two comments on the want of candour—as it appears to me—betrayed in his mode of treating the subject. In his first communication, which professed to give the *History of Brahmas*, after pronouncing these birds to be "a very coarse variety of the ugliest of Shanghaes, and very deficient in the beauties we are accustomed to look for in Buffs, and other colours," he attempts to confound with them another and quite distinct strain of Grey Shanghaes, known in this country long previous to the introduction of the Brahmas; and, without saying one word about the *history of the latter*, proceeds to give a partial account of the origin of Mr. Stainton's Greys only.

In his present letter, written "in explanation" of the above tirade against Brahmas, he still persists in including "all the Greys he has seen" under one and the same disparaging criticism; and, by admitting no distinction between one strain and another, wishes, apparently, to have it believed that all strains of Grey Shanghae, because similar in colour, are therefore of equal merit, or, as he would have it, demerit. Now, Sir, I would protest against this indiscriminate blending of two totally distinct strains, of different origin, and each possessing distinctive characters. With about equal truth and justice, might I, in describing the characteristics of an inferior strain of Buffs I once possessed, and of which, indeed, I was not a little proud when I first kept Cochins-Chinas, include in the enumeration all the most prominent beauties of Mr. Sturgeon's superlative strain of the same period, between which and mine, there, nevertheless, was about the same relative difference as between an Irish Hunter and one of Barclay and Co.'s incomparable dray horses. But further, I protest, as far as the Brahma strain of Greys is concerned, against the untruthfulness of the picture C. H. B. has here given of them, and believe your readers generally will reprobate the injustice here done of pitting the worst features of very inferior specimens of Greys against the highly-developed qualities of unusually good specimens of Buff. The disingenuousness of this method of dealing with the question has left on my mind no other conclusion than that C. H. B., while professing to "know the subject well," has either never seen or taken the trouble to look for, and examine, even moderately favourable examples of the birds he has, under pretence of being a good authority, so unhesitatingly condemned; or that, having really seen some of the best specimens of the Brahma strain of Greys that this country affords, he has wittingly sought to depreciate that strain in your columns by taking his estimate of their qualities from the worst samples of Greys to be met with, and unequally matching them against similar qualities in the best Buffs. Let him choose which horn of the dilemma he pleases—impaled on either, I leave him to the judgment of those of your readers who are in a position to form a correct estimate of the case; or, should he think it necessary to dispute one or the other, then, without wasting more words with one from whom I confess I do not feel sanguine of being met with fair argument, I call on C. H. B. to accede to the following propositions, by way of coming to a fair and speedy conclusion in the matter. And you, Mr. Editor, will not refuse your arbitration in a dispute, which, by its settlement, will, at least, admit of your reclaiming a portion of your valuable space from less genial topics, to occupy it with others better suited to the tastes of the majority of your subscribers. My first proposal is, that I send, to be sub-

mitted to your inspection, one or two pair of my Grey Shanghaes; that is, the most forward chickens of the variety I possess, for my old birds being in full moult, I cannot, or I would willingly, send them. If you (or along with yourself any other impartial judges of the breed you may think well to call to your aid) are of opinion that the general tenor of the criticism on, and the description of, the breed contained in C. H. B.'s letters, give in any degree, a fair, or, I will say, do not convey a most unfair, portraiture of the variety, as represented by those birds, then I will most humbly cry *Pecavi*, and, as some reparation for C. H. B.'s aspersed candour, will contribute £10 to any charity or philanthropic society he may choose to name. C. H. B. doing the same, by my nomination of a similar society, should the decision be in my favour. The second proposal I have to make has reference to C. H. B.'s assertion, as to the perfect identity, in point of merit, of the Brahma, and Mr. Stainton's strain of Grey Shanghae; as a test for which, I challenge C. H. B. to send one or two couple of the latter, which, in your opinion, shall be equally meritorious, or will stand a fair comparison with the Brahma chickens, to be sent in accordance with my first proposition. This C. H. B. will, perhaps, say is hardly fair, as, of course, he does not keep these "ugly birds;" but having "known these Grey Shanghae for years," he will, doubtless, know where to find the least objectionable specimens. And to give him every facility for vindicating the truth of his assertion, he shall be at liberty to search the kingdom through for any specimens he can beg, borrow, or bring; the only stipulation I shall require, being satisfactory proof that the birds produced are not directly or indirectly of the Brahma, or the American strain known under that name. C. H. B. will scarcely refuse to avail himself of these easy conditions, to vindicate his credit for impartiality, particularly, accompanied as it is, with the pleasurable prospect of, in the event of success (for I propose to attach the same penalty to defeat, in this, as in the first case), bestowing £10 on some cherished object of his philanthropic regards.—W. C. G.

WEIGHTS OF BRAHMA POUTRA CHICKENS.

	JUNE		JULY		SEPT.		OCT.	
	26	3	17	22	29	6	13	
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	
No. 1 Cockerel - -	1½	2	3	6	6½	6½	7½	
" 2 ditto - - -	1½	2	2½	5½	6	6½	6½	
" 3 Pullet - - -	—	—	—	3½	4	4	4½	
" 4 ditto - - -	—	—	—	3½	4	4	4½	
" 5 ditto - - -	—	—	—	3½	3½	4	4½	

The Cockerels were, I believe, hatched about the first week in May; the Pullets about the second week in June. I have a very fine Buff Cockerel, bred by Mr. Fox, hatched in March, which weighs, this day, 7½ lbs., and he is a very fine bird. The Brahmas were, from July 17 to Sept. 20, running indiscriminately with about forty other fowls, and not at all highly fed; neither are they now.—P. JONES, JUN.

PEARS IN 1853.

It may be worth while, now the season is past, the fruit gathered and housed, and whilst we stand, as it were, almost on the last foothold of the waning year, to look into the Pear question, and, if agreeable to our readers, to compare notes. I think no apology is needed for this, as the Pear certainly occupies as important a place in the dessert of thousands as any fruit we possess. The Apple may be said to be the fruit of the million, not because everybody prefers an Apple to a Pear, but because thousands can get at an Apple when they cannot procure a mellow Pear. I have before observed, in these columns, that there exists no possible reason why the Pear should not be the fruit of the million as well as the Apple. And why is it not? We all remember its being said by somebody:—

"He who plants pears,
Plants for his heirs!" &c.

But this doctrine is now entirely set at naught; it will not

do for these days of steam. This distich, doubtless, originated in the fact, that a century or two ago only one idea seemed to prevail with regard to not only Pears, but fruit-trees in general. Ground must be deeply dug and enriched; and as for root-pruning, why it was performed with all possible pomp when the young tree was consigned to its destined station, but nothing of the kind ever after. I believe, however, that Mons. de la Quintinye has a hint or two at the possibility of such things, but he speedily shirks the subject.

Besides all this, it must be confessed, that the kinds in vogue in those days were not so famed for precocity of bearing as some of those of modern date. In the "Complete Gardener" of Mons. de la Quintinye, by London and Wise, now lying before me, I see the following as most highly esteemed in those days. I give them as they stand in the edition, dated 1710:—"La bon Chretien d'Hyver; La Beurree; La Virgonlee; L'Epine d'Hyver; La Crasanne; La St. Germaine; La Colmar; La Louis bonne; La Vert longue;" &c. &c. These seem to be the chief Pears there recommended, but we do not vouch for our author's style or orthography. There is, of course, a copious list of autumn Pears besides, but these I extract as being of the class we now call winter Pears. It is rather amusing to look over our author's descriptive account of their merits or demerits, the phraseology of those days being, of course, more obsolete. For instance, of La Crasanne, he says, "it perisheth very leisurely." Of others, he says, "they are indifferent good;" and the terms "doughy, glewy pulp, sowrish, wildish taste, competent bigness," &c. &c., would seem to show that we really have made some advance. I can fancy how such a nice palate as de la Quintinye's would have run riot over a first-rate *Winter Nellis*, or a melting *Marie Louise*, of some ten ounces in weight, as we have them in these days.

But then, as to bearing; most of their keeping Pears were a long time coming into bearing. As far as I can learn, they had nothing comparable—taking size, early bearing, flavour, and prolific habit—to such Pears as *Beurre diel*, *Louis bonne* of Jersey, and we may add *Beurre d'Amandis*; others might be quoted, but these will suffice for illustration. These things, combined with highly-simplified modes of culture, based on physiological principles, will warrant us in anticipating, that before many years have passed, good Pears will be as common as good Apples; for were people to be better assured of their being able to produce keeping Pears profitably, many broad acres would, no doubt, be speedily planted.

The only opposing point, in reality, with which I am acquainted, is to be found in the fact, that the Pear blooms much earlier than the Apple; and thereby undergoes more changes of severe weather. This is, indeed, a fact; but how fares it with our ordinary orchard Pears, standards of which may be found all over the kingdom a century or two old, and which, on the average, produce as fair crops as many Apples? But it will be said, the bloom of our improved breeds is more tender; perhaps it is so with some of them, not with all; but what, if it can be shown that this is owing to over-culture, and that a better ripening of the wood will all but place them on a par?

Now, I am prepared to admit, that with all this, it would be expedient to afford some degree of protection, and whilst our friends around are so clamorous for heated walls or glazed frontages to their Peach walls, I do hope they will not deny me the boon of a few spruce or other boughs to stick amongst the Pears. This has been my kind of protection for a few years past; and when once stuck amongst the Pears they are not removed; for any process which involves much extra labour would not fit my case. With this simple procedure I have had crops which have astonished most persons who have seen them. Mr. Paul, of Cheshunt Nurseries, the eminent Rose-grower, called here a few days since, and was fairly taken by surprise. He told me he had not seen such an illustration of the dwarfing and tying-down system in all his travels. I have a *Marie Louise* dwarfed, and which occupies a plot of ground about eight-feet square, which had nearly a bushel of fine Pears on this year; they hung down like ropes of onions, and the tree is not more than four feet in height. I merely quote these things to show that what I here suggest is not crude speculation, but is backed by real facts. Certainly, it must be admitted, that in

consequence of the seasons varying so much, some of our Pears are, at times, by no means so satisfactory in point of flavour as could be desired; but one thing must here be confessed, and that is, in purveying for a family, the demand of which varies by unforeseen circumstances at times, it becomes necessary to keep some kinds beyond their natural period; and this is even done at the expense of flavour. Thus, it might be desirable to keep some of the *Glout Morceau* until the middle of March, for some special occasion; a gentleman may ask his gardener, "Can you do it?" He answers, "Yes;" but behold, when they come to table, they look plump enough, to be sure, and look like fine Pears, but those whose temerity lead them to attack one will be fearfully disappointed.

I find, by experience, that Pears, like other fruits, when swelling a crop, require a certain amount of moisture. This summer has proved the matter beyond a doubt; for although a cool summer, some kinds have swelled larger than usual. This, however, is no new idea; for of old time, Pears were said to crack through copious rains after drought, they having become what is termed hide-bound. But this only applies to trees of some age, or carrying disproportionate crops. I have a line of trees, on a dwarfing system, which have been under training thus for twenty years; the stems of many being nine inches in diameter, although not one of them is more than four feet in height. These have never received one barrowful of manure in the twenty years, neither has the waterpot been once in request; and I can say, that the older they get the more valuable they become. So, then, Pear-planting will never affect the manure question, and we may thus hope for the patronage of the agricultural portion of the community.

There is still a vast difference of opinion as to the use of stocks; some vowing a lasting fidelity to the Quince stock. This strongly reminds one of the discussions in the case of *Manetti* versus *Dog Rose*; although we cannot make a complete parallel of the two cases. I still think that some kinds, perhaps many, will be best dwarfed on the Quince, providing the soil suits that stock; but, how any man in his senses can think, that because an unfortunate Quince has a fancy Pear bestriding him, that this same compound will thrive where a genuine Quince, without any superaddition, will not, I am quite at a loss to guess. Would this apply to a Larch, with a Lebanon for a leader? If so, the roots of plants are certainly very good-natured things; and as to power of selection, why this will almost settle this long-disputed point at a blow.

In order to illustrate the matter, let us suppose Cranberries grafted on some of our *Vacciniums* which are thriving in dry upland-heath soil. Who will engage that we have a crop of Cranberries?

Even in London and Wise's days, as I find in their "Complete Gardener," before alluded to, De la Quintinye talks of Pears answering on the Quince, *if in clayey and moist soil*. Perhaps, nothing is so ill-understood, in the whole realm of horticulture, as the question of stocks. Somehow, this utilitarian affair is left entirely to our nurserymen.

My opinion is still, that if the free stock were annually transplanted for the first three or four years, from the seedbed, there would be little need of Quince stocks. The sole problem rests here, as I think. In order to ripen the wood of tender Pears they must depend on surface roots chiefly. The Quince produces these in abundance, but it is a saucy customer: not everybody can understand his bent. Pear stocks, with such roots, are the most natural stocks; but it is not their habit to produce such. The question then is, Can they be made to do so? I at once answer, Yes. I have said here, in an offhand way, "transplanted annually the first three or four years." Now this must be taken guardedly, for it is not obliged to be exactly thus. Our practical men will carry out this to their own taste. I only wish that I could get some of our nurserymen to try this plan, for assuredly, the Quince is but an awkward customer as at present handled.

R. ERRINGTON.

POULTRY DISEASES.

Is the ROUP in fowls REALLY contagious?—I am quite aware that nine out of ten of your readers are ready to exclaim,

"Yes, of course it is; every body says so." Whether, however, I look at the common causes which so easily produce the disease, such as cold, damp, bad ventilation, uncleanness &c.; or at the nature of the disease itself, inflammatory catarrh; or at the few experiments I myself have made; or at the certainly very inconclusive details set forth by others; I am wholly impressed with the very opposite conclusion.

My purpose, however, is not to argue the matter, which would certainly not lead to a settling of the question; but to request that some of your readers, who are well acquainted with the disease (and I repudiate the notion that there are two diseases, it only being a difference in severity), would be so kind as to send me, say two fowls, in the very worst stage of the complaint; these birds I shall place with healthy fowls, and conscientiously detail the experiment in *THE COTTAGE GARDENER*, and repeat it, again and again, if afforded the opportunity.

If it prove contagious, I shall be thankful for the knowledge; if it does not, others will feel relieved of their present fears.

What is REALLY the nature of the GAPES—Though it is thought that great progress has been made in ascertaining the nature and treatment of poultry diseases; and smiles of satisfaction mantle our lips as often as we think of the "march of intellect," I fear it will be found that we shall do well to march a little back again.

It has been stated, again and again, in *THE COTTAGE GARDENER*, and repeated in a separate publication, by Mr. Tegetmeier, that the cause of Gapes is the presence of worms in the windpipe. This, I hesitate not to declare, is an error. The disease of Gapes is, truly, inflammation; acute subacute, or chronic, as the case may be, of the lining membrane of the larynx and of the windpipe, which produces a thickening, and a deposition, or exudation, of a false membrane, and this, narrowing the air passage, produces the symptom called Gapes—the fowl gaping to open, as it were, a freer passage for the air. The small worms, or fasciolæ, said to have been extracted by the twisting of a feather in the passage, I judge to be small shreds, or pieces of this false, or newly formed membrane, broken up by the feather.

I have, with the utmost care, dissected six fowls that died of the Gapes—in none of them were any appearance of worms to be detected; but that diseased state of parts that I have just described; and which I hesitate not to pronounce is the true nature of the disease.

I would not deny, however, the possibility of parasites infesting, either the windpipe, or any other part of fowls; I would, therefore, entreat any one of your readers to forward me the windpipe of a fowl containing them: or, a fowl affected with Gapes, where those parasites are pronounced to exist. It will be observed, that though different individuals are said to have extracted the worms with feathers; or that the hen has coughed them (the broken up membrane?) up, after the twisting of the feather; yet no one has described them as situated in the windpipe, by dissection after death.

To deal further with this question, by correspondence, will serve no purpose. We must see these worms *in situ*, in the windpipe; and I again entreat any one of your readers to furnish me with an example, to dissect, as none such occur in my own experience.—R. HORNER, M.D., Hull.

P.S.—Since writing the above, I have been most unexpectedly gratified with a note from Dr. Ranking, of Norwich, well known as the learned author of the "Half-yearly abstract of Medical Science, &c." wherein, without one word on the subject from myself, he greatly corroborates my statements and opinions. He says, "I have lost a fowl or two with membranous croup or diphtherite; the symptoms were, in the first instance, those of Coryza, followed by Gapes, or laryngeal dyspnoea—the larynx contained a soft membrane. A second case, I have healed by antimony and dislodging the membrane with a probe. I fancy the membrane has been mistaken for a worm in the trachea occasionally."

I hope it is quite unnecessary to add, that in both the foregoing instances, truthful enquiry and elucidation is my sole aim. Yet, feeling, that in so subtle a matter as that of contagion, I should myself doubt the conclusions arrived at in any particular case by one holding opposite views, unless I was fully satisfied with the genuineness of all the preliminaries—so do I now wish that the diseased fowls to

be operated with should be selected by others. For we know that the judgment may sometimes be self-imposed upon, either by a too scanty survey of those circumstances which are adverse to previous impressions, or by over-estimating those which support its foregone conclusions.

Fortunately, we have not now to investigate the abstract doctrine of contagion, but simply to deal with realities; and, being agreed upon the existence and identity of Roup in a particular fowl, have but to watch its effects on others; that is, whether it be communicated or not. I repeat, that such a procedure as that now suggested is the only one that can satisfy the public. All *ex parte* statements, however honourable the individual who makes them, experience has taught me to doubt in matters relative to contagion. Cholera, itself, was shown to be contagious by eminent physicians, some years ago, on *ex parte* statements—a doctrine now repudiated by themselves.

TO CORRESPONDENTS.

** We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

PROMISES (*Carrig Cathol*).—Your request shall be strictly attended to; but the end of February is now the earliest period to put the train in motion. We shall preserve your letter till then, and all you say will be represented to the parties, with our own request, as earnestly as we can make them. The *Irish Ivy* succeeded very well indeed.

FLOWER-GARDEN PLAN (*E. M.*).—The plan of your beautiful flower-garden will be engraved forthwith, and all that you say and want about it will be introduced into our own notes respecting it.

LIST OF BEDDERS (*J. C. and Neighbour*).—Pray let us have the desiderata and the lists at once.

WATSONIA FULGIDA (*S.*).—The very information you ask for was given this very autumn. "A small root of it" may not flower these three years. Keep it green as long as you can; as it was late in potting, keep the frost from it. It does not require a second pot; do not force it to rest, and most likely it will keep green till next autumn. If it is green next May, turn it out into a nice south border.

ICED THINGS (*J. C.*).—How odd that you never think of getting ice dishes to hold the butter for breakfast till other folks are clearing out the ice-houses for a fresh supply. We could not now write about such things without the shivers. Remind us again when the weather renders ice a luxury.

ROSES (*Carrig Cathol*).—No. 1 is *Anie Vibert*, a Noisette; and No. 2 another Noisette, but the variety not determinable.

PILLAR ROSES (*M.*).—Our correspondent has four pillars, and wishes to plant three kinds of Pillar Roses to each; she wishes them to flower five or six months in the year, and, if possible, to have crimson, rose, or pink, and a white or yellow to each pillar. It is evident, then, that none but Perpetual Roses will suit her, and among them there is neither a white nor a yellow, therefore she must put up with Paul's *Queen Victoria*, as yet the best light Perpetual Rose which opens out-of-doors, of a flesh colour, and turns white as it fades. Of yellows, there are none for a pillar. *Madame Laffay* is the best crimson for a pillar. *Mrs. Elliot* and *William Jesse* make splendid pillars, of a deep rose colour; *Baron Provost*, a blush, and one of the largest; *Caroline de Sansal*, another fine blush Rose for a pillar; *Compte Robrinsky*, fiery-crimson; *Standard of Marengo*, crimson-lake, with *Geant des Battailles*, would make the most brilliant of all, the latter to keep the bottom full and fiery. *Gloire de Rosmène*, the same. *Chateaubriand*, fine pink; *Auguste Mie*, light blush; and *Pius the Ninth*, crimson, would make another good match. To make a speedy pillar of such, one for each pillar ought to be a strong, tall standard, and two dwarfs. The treatment of such pillars will be given shortly.

WHITE SPANISH FOWLS (*W., a Subscriber*).—A pen of white Spanish Fowls was exhibited at Birmingham in December 1852. Regarding them as similar abnormal productions to the white (Albino) chickens from the white-crested Black Polish, we should certainly expect to find them inferior to the Black Spanish in constitutional strength, and consequently below them in merit as layers. We have no accurate data, however, now before us, on which we might give an exact comparison on the relative number and size of the eggs laid by them, but surely the substitution of white plumage for the glossy black of the well-bred Spanish is no gain to their personal appearance.—W.

BLACK SHANGHAI FOWLS (*Alpha*).—The Black Shanghaes of this year are better birds, in respect of their intensity of colour, and the absence of brassy feathers, than those of preceding seasons. We have seen cockerels without any symptoms of a feather thus marked, although, in a great majority of instances, this failing is still present; pullets of uniform black are far more easily obtained; but hitherto we have not gained, in this variety, the deep velvet black of other fowls of that colour. The Secretaries of all Poultry Societies, we imagine, will receive fowls sent to them for exhibition; labels are usually sent to exhibitors when the forms of entry are returned, with the direction of the owner, to be filled up by him on the reverse side, which is affixed to the basket after the show has closed, and the birds are returned.—W.

WEIGHT OF GESE AND DUCKS (P.).—A young early-hatched *Goose* of the Toulouse or Embden breeds, should have reached, with good keep, 14 lb. (live weight) at Michaelmas, but the common breed, at this same age, would rarely be above 11 lb. 6 lb. would be a fair average live weight for an *Aylesbury Duck*, but many birds exceed this considerably.

PLANTS FOR ROOF OF WARDIAN CASE (F. C. F. G.).—No Orchids would live long in your Wardian Case. You wish for forced plants to grow from the roof. Try the following:—*Lycopodium Louisiana*, *Epiphyllum truncatum*, *Tradescantia discolor*, and *Asplenium flabellifolium*. All these will droop downwards, and grow in a small basket, if the plants are chosen small at the first.

KEEPING HOTHOUSE GRAPES (T. R.).—Hothouse Grapes are best preserved on the vine itself, the house being kept cool and dry after the fruit is ripe. To keep off birds, wasps, and flies, the bunch should be tied round, or placed in a fine white net bag, the meshes of which are so fine as none of the above devourers of grapes could get to the berries. They should be examined frequently, and all mouldy berries removed as they appear. The foreign Grapes are kept in bran, but they soon lose their flavour and become worthless. The English hothouse Grapes, any time, fetch nearly as much more as the foreign fruit; but our own fruit cannot be kept any way so well as being on the branch that produced it.

GLASS-COVERED WALLS (J. Whiting).—You wish to know at what distance the glass on a glass-covered wall should be from the wall. Those at Trentham are $3\frac{1}{2}$ feet to 4 feet, quite up to the top, the glass in front being upright. The one Mr. Appleby mentions as being seen at Woodlesford doing so well, was, as near as he can recollect, 4 feet from the wall at the base, and sloping up to a wooden projection from the wall, about nine inches wide; but we have just heard of a better construction in North Wales, and have written for the particulars, and will communicate the answers. The cost of such a facing of glass, with a narrow glass roof, the wall 10 feet high, and the glass 4 feet from the wall at the base, and $2\frac{1}{2}$ at the top, is about £1 per running-yard, fixed complete, without reckoning any little bricklayer's work there may be necessary.

DISEASED DORKING (E. H.).—The hen described as moping and spiritless, eating little, and not laying, is, most probably, suffering from disease of some important internal organ. In the absence of further information it is not very evident what organ is affected. As an alternative, a grain of calomel may be tried, followed by a teaspoonful of castor oil. Both medicines are readily given mixed with barley-meal.—W. B. T.

PROTECTING PITS (F. Couniham, and others).—See an article to-day by Mr. Fish.

HOUSE FOR MANY PURPOSES (T. S.).—If your object is to grow Cucumbers and Vines in pots, in a house in which you wish to keep other Vines on the rafters dormant, then have the main Vines planted out-of-doors, and the wall-plate so arranged that you can take the tops out at pleasure.

CONSERVATORY VINERY (A Friend).—See p. 21. You are quite mistaken as to our wishes; you only please us by such questions, as they show we are not labouring in vain. We will think the matter over; meantime—First. Large pots will do as well as the small brick pits for the plants on the back wall. Secondly. Place the plants in the bed, the tallest at back, and just so near that they do not touch, giving more room as they want it. Thirdly. One *Lycopodium*, such as *denticulatum*, would do better for the edging than several; but you could introduce comparatively hardy ones in other places. Fourthly. We like your dividing the bed in two, with a path in the middle, rounding the beds there, so as to have a rock-work opposite the opening in front for Ferns and Mosses. We see, by that, that you do not mean to have a shelf. What would you say to inserting early bulbs in the rock-work? They would look very pretty; at the risk of narrowing the beds, we would almost recommend you to have two other jutting-out pieces, one on each side of your contemplated central piece, but not so large as that. A sweep inwards, the widest part about fifteen inches, in the centre of each bed, would give you a regular serpentine walk, and great variety in a small place. We shall retain this last note, so that we may refer to it in case more should be wanted.

GAME FOWLS WITH BANTAMS (W. R. R.).—An immediate mongrel race would be the certain result of allowing Game Fowls and Bantams to run together. The characteristics of a good gold-laced Bantam would comprise the rose comb, uniform, clear lacing, on a bright golden bay body-colour, the square tail tipped with black, clean blue legs and feet, with an erect, corpulent carriage; 17 ounces for the male, and 14 ounces for the hen, being the usual standard. Look to the article on "Bantams," in the "Poultry Book."—W.

COVENANTS IN A LEASE (Clericus L.).—The only advice that we can give you, is that you should ask the steward of some large land-proprietor, in your neighbourhood, what covenants he finds most advisable to introduce in a lease. Having ascertained this, you had better employ an attorney to draw up the lease. This, in the end, is usually the cheapest and most satisfactory mode.

GAS STOVE FOR A GREENHOUSE (F. H. L.).—We have no objection to a gas stove for merely excluding frost, if care is taken to have a sufficient tube for carrying away the gases produced by burning the gas, so that none of them contaminate the air of the house. We objected to stoves, with patent or other fuel, that have no chimneys for the escape of the gases produced.

LIST OF POULTRY SHOWS (E. Archer).—We continue this whenever we have spare space. The petty feeling which withholds some advertisements of them from our columns needs no comment.

WEIGHT OF SHANGHAI CHICKENS.—A *Subscriber*, whose address we have, says:—"In THE COTTAGE GARDENER of Sept. 8th, in speaking of the weights of Shanghai chickens, it is stated, authoritatively, 'Shanghai cockerels or pullets never weigh more than one pound for every month, until they are eight months old.' Of course, you will be glad to receive any examples of exceptions to this rule, and to lay them before your readers. A 'fancier,' in this town, has a cockerel and three

pullets. The pullets were hatched March the 24th. The cockerel within a few days of the same time. The pullets are all nearly the same size, and I have just seen one of them and the cockerel weighed. Their united weight was eighteen pounds ten ounces. The cockerel being ten pounds two ounces; the pullet seven-and-a-half pounds. I may say that the pullet does not weigh to advantage, just at present, as she is broody, and has begun to moult. The pullets have laid regularly for the last two months."

DISEASED FOWLS (H. C. S., Spondon).—It is the roup. You will find the mode of treatment in preceding numbers.

COLOURED PLATES (Synla).—Quite impossible to be done. It can be done when the copies required are a few hundreds, but not when they are wanted in thousands. Thanks for your other hints.

THE COTTAGE GARDENER (T. F.).—The two volumes for 1852—3, bound in gilt cloth, you can have for seven shillings each. Any number, any part, or any volume, can now be had. We never heard of a *self-feeder* for poultry. It is as impossible for us to tell you the value, or probable returns, of any kind of poultry without seeing them, or knowing their pedigree, as it would be for you to answer the same question as to any animal of which you know nothing but the name. You shall be informed about *Fuchsias* next week.

WILLIAM ADAMS (C.).—Thanks for the ten shillings, which were gratefully received.

PEARS SPLITTING (Leytonensis).—If your Doyenné Pear is grafted on a Quince stock, that is sufficient to account for the fruit splitting. We have many such instances, and all showing that the stock does not afford, on some soils, and to some varieties, a sufficient supply of sap to the fruit. If your Pear is not on a Quince stock, the deficient supply of sap is caused by the roots being defective. Manure the soil, and keep it mulched over in the spring and summer.

CORALLINES (Dowalus).—We would aid you if we could, but we know little or nothing about them.

CULTIVATION OF FUNGI.—A *Lover of Cryptogami* enquires—"Can *Fungi* be cultivated? I mean the flaming beauties one sees in damp places at this time of year." Any of our readers will oblige by stating the results of their experiments on the propagation of *Fungi*.

NAMES OF PLANTS (Margaret).—It is no Phlox, but *Plumbago Larpenæ*. (Clericus).—Your low-growing shrub is *Cineraria maritima*. Mr. Beaton (vol. vi. page 96) appropriately calls it "the Frosted Silver Plant." (A. B. C.).—No. 10. *Aloe verrucosa*, or Warted Aloe. No. 13. *Begonia sanguinea*. (A. B.).—The white-flowered *Acanthus mollis*; the yellow *Helianthus multiflorus*.

NAMES OF FRUITS (A Surrey Subscriber).—PEARS.—No. 1. Beurré Capiaumont. 2. Williams' Bonchrétien. 6. Autumn Bergamot. 7. Autumn Bergamot. 8. Maria Louise. 9. Swan's Egg. 10. Easter Beurré. 11. Easter Beurré. 12. Swan's Egg. APPLES.—No. 2. Scarlet Nonpareil. 6. Blenheim Pippin. 7. Dutch Codlin. 8. Yorkshire Greening. 10. Cockle Pippin. 11. Beauty of Kent. 12. Gravenstein. 13. Hawthornden. 14. Northern Greening. 15. Monk's Codlin. 17. Boston Russet. 18. Autumn Pearmain. 20. Ribston Pippin. 22. Margil. The others were either so far decayed, or the labels lost, that we cannot complete the list.

ERROR at page 32, "Names of Plants." In answer to "A Constant Reader," 2 should be *Aristotelia maqui* var. *variegata*.

CALENDAR FOR NOVEMBER.

FLOWER GARDEN.

ANEMONES, plant for succession bloom. AURICULAS and POLYANTHUSES, put under shelter (See October). BULBOUS ROOTS, finish planting in dry weather; pot for latest forcing, and for plunging in flower-beds, &c. CARNATION layers, finish planting and potting; secure the pot at once from rain. CLIMBERS of all sorts, plant, prune, and train. COMPOST, prepare and turn in dry weather. CROCUS, pot large lumps from the borders for forcing. CHRYSANTHEMUMS, against walls or fences, secure from frost. HALF-HARDY bulbs in borders, secure from frost and rain by a boarded covering. DAHLIAS, cut down after frost, and let roots remain as long as it is safe; when taken up, dry them in open sheds, &c., before storing, where frost and damp cannot reach them. DRESS the beds and borders, and put mark-sticks to bulbs and other roots, to guide you when digging. EDGINGS, plant. EVERGREENS, finish planting, b. FIBROUS-ROOTED PLANTS, finish dividing and planting, b. FORT over borders, &c. GLADIOLUS: all the old sorts may yet be planted; most of the new do better planted in spring. GRASS, cut very close the last time; kept clear of leaves; and roll. GRAVEL, weed and roll. HEDGES, plant, clip, and clear at bottom. HOE and rake shrubberies, and bury the leaves, &c. between the plants. HOLLYHOCKS, finish planting. LAYERING, perform at intervals, if fine weather, till March. LEAVES, gather for compost, &c. MARVEL OF PERU, take up and store like Dahlias. MULCH round trees and shrubs lately planted. PLANT perennials and biennials (See October). PLANTING, deciduous shrubs and trees, perform generally, and finish as early as practicable. POTTED PLANTS, for forcing, plunge in the earth of a well-sheltered border facing the sun. PRUNE shrubs and trees generally. RANUNCULUSES, plant for earliest bloom. Seedlings of them, in boxes, &c., remove to a warm situation. WEAK ROSES, prune without delay; very strong ones, delay pruning till March; tender ones, secure from frost with moss, fern, &c. SHRUBS of all kinds, plant, stake, and mulch. SUCKERS, from Roses and other shrubs, separate and plant. TIGRIDIAS, save from frost as long as possible; should not be dried till January or February. TULIPS, finish planting, b. D. BEATON.

GREENHOUSE.

AIR, admit rather freely, in dry weather. AZALEAS, for blooming early, keep in the warmest end of the house, and they will not lose many of their leaves; if the buds are well set and prominent, a few may receive the heat of a plant stove, to bring them in by Christmas; those once forced will come earlier of their own accord again. Those for flowering in spring and early summer keep as cool as possible, so that the temperature is above 35°. BULBS, such as Hyacinths, Tulips, Narcissus, &c., pot for spring flowering, and so manage them that roots shall precede flower-stems. CALCEOLARIAS, keep growing slowly, in an airy, moist atmosphere; seedlings, pot off, and prick into pans; cuttings of shrubby ones may now be potted, and cuttings may even be put in in the beginning of the month, in a cool, moist place. CAMELLIAS, finish setting in; and the late ones may have their buds thinned, if necessary; the earliest will now be swelling, and a little cow-dung water, cleared, and not too strong, will do them good; these should be placed with the forward Azaleas. CINERARIAS, encourage the forwardest to grow in a moist, gentle heat; keep those for spring and summer just moving. CLIMBERS, however beautiful, cut back to give light to the other plants. CHRYSANTHEMUMS, remove incipient roots from the axils of the leaves on the main shoots; thin the buds where too thick; encourage with manure water; and if not all in-doors, have protection ready. DAMP STAGNANT AIR, avoid. FIRES, light in frosty and foggy weather, that air may be given; but give artificial heat during the day, rather than at night, unless the frost is very severe. Choose a sunny day, if possible, to light your first fire, as your flue, &c., will be more easily dried; it is no joke to be fixed in a stock-hole behind a fire that will not burn. FURNACES and FLUES, clean out previously. HEATHS and EPACRISSES, keep in the airiest part, especially the former. GENISTAS, CYTISSES, CORONILLAS, &c., syringe in a sunny day, and aid with manure water, to cause the bloom to open strongly. GERANIUMS or PELARGONIUMS, encourage the old plants with a good position; train into the desired shape. Nip any luxuriant shoot, so as to equalise the strength; keep fresh potted ones just moving. GOMPHOLOBIUMS, *Platylobium*, *Chorizanthes*, &c., place in double pots, that they may be more uniform in moisture, as extreme dryness and extreme wet will alike be their ruin. PLANTS, keep clear from dirt and insects, by washing and fumigation. TEMPERATURE, keep from 40° to 45° at night. WATER only when necessary in dull weather; little will be wanted, unless for plants swelling their flower-buds; for these use water warmer than the air of the house. A slight dusting with the syringe over the foliage will be serviceable in a sunny morning. CLEAN pots, paths, stages; tie, train, and fresh label in bad weather.

R. FISH.

FRUIT-FORCING.

CHERRIES in TUBS, &c., protect roots. CAPSICUMS, dry off at root to ripen them. CUCUMBERS, afford necessary heat, not below 70°, with air-moisture and all possible light. Early forcing prepare for. FIGS for forcing, get to rest; protect pots or boxes, as also branches. FLUES, clean all and repair. INSECTS, continue the warfare against, also preventive measures. MUSHROOM-BEDS, provide succession; spawn when down to 75°; sprinkle beds where the Mushrooms are coming through; keep a moist air. MELONS, sustain 75° bottom-heat, 70° top-heat, with abundance of air; fumigate if infected. NECTARINES and PEACHES, prepare for early forcing, by using the wash so often named in this work, pruning them previously. PINES, in dung-pits, improve declining heats; 60° to 70°, with liberal ventilation. PINES, late fruiters, 5° more; air in moderation. REPAIRS, carry out directly in all houses. REST fruits for forcing, plunge and protect wood. STRAWBERRIES, in pots, plunge and protect. VENTILATION, attend well to during dull periods. VINES, for early forcing, as *Peaches*; if roots outside, protect border directly. Vines, in fruit, fire occasionally; ventilate freely; keep very dry, and use scissors weekly.

R. ERRINGTON.

ORCHARD.

BORDERS, autumn-dress. BUDS, cut bandages off. CHESNUTS, gather. DRESS TO KILL INSECTS as soon as pruned. FRUIT, gather all remaining. FRUIT-TREES of all kinds plant. FRUIT-ROOMS, ventilate freely. FRUIT-STORES, pick over. INSECTS wage war against, at every opportunity. MEDLARS, preserve. MULCH, apply to newly-planted trees. NUTS, remove suckers from. NAILING, proceed with, in order to expedite spring business. PRUNING, perform in the following order: 1st. Bush-fruit, then Cherries, Apples, Plums, Peaches, Vines, &c., and ordinary Pears, reserving choice ones, Apricots, Figs, &c., until spring. PROTECTION for blossom, lay by from shrubbery or wood prunings. PLANTING, proceed with, all but Figs and Vines. RASPBERRIES, plant suckers from, and prune. ROOT-PRUNING, perform immediately. STAKING, see to. STRAWBERRIES, remove rubbish between rows, and manure, but cut not the foliage. STATIONS, prepare. TRAINING, carry out betimes. TOMATOES, ripen before the fire. TOP-DRESSINGS, apply. WALKS, turn or clean for the winter. WEATHER: provide in-door's work for a bad season, such as labels, stakes, training pegs, &c., and grind your bill-hooks, and file your hand-saws.

R. ERRINGTON.

ORCHID HOUSE.

AIR will seldom be required during this month; keep the air inside much cooler, because most of the plants ought now to be in a state of rest. BASKETS, plants in, should only be syringed; they ought to be so placed that the drip from them may fall into the walk. DIVISION: such plants as *Stanhopes*, *Gongoras*, and *Acropeta*, may be divided this month, with a view to increase them; give these no water till they start into growth again. HEAT: the thermometer in the warmer house should be allowed to fall to 58° in the night, and never exceed 70° by day; 65° without sun will be sufficient. POTTING will be required occasionally; even at this untoward season of the year some plants will grow, and, therefore, must be potted, because if delayed, the young roots will begin to push, and then it is difficult to pot without breaking them. REST: keep all the plants possible at rest for the next two months; the means are a cooler and drier atmosphere, and no more water at the root than is absolutely necessary to prevent the pseudo-bulbs perishing. SYRINGING

will be necessary to plants on blocks, two or three times during the month. WATER, apply sparingly, except to plants growing; to these a larger quantity may be given.

T. APPLEBY.

PLANT STOVE.

AIR will still be necessary to this department; give it early in the forenoon, and close the opening by two o'clock. To sweeten the air, light the fires early in the morning, and give air accordingly; this will allow a large body of fresh air to enter the house, which will displace as much foul air. CUTTINGS of stove plants should all be potted off early this month if rooted. BULBS should now generally be at rest; keep them dry and moderately cool, to prevent a too early excitement. FACING-FLOWERS for this department should be commenced slowly, early in the month, such as *Azaleas*, *Lilacs*, *Laburnums*, *Rhododendrons*, *Roses*, &c. These will flower in December or January. WINTER-FLOWERING PLANTS will now be showing their flowers. They should have a moderate supply of water, and occasionally a watering with weak liquid-manure. Keep every part of the stove perfectly sweet and clean; remove all decaying leaves as they occur; stir up the surface of the soil in the pots, to prevent moss and weeds from appearing. In this month, a supply of the different soils, manures, and vegetable mould, should be procured.

T. APPLEBY.

FLORISTS' FLOWERS.

ANEMONES may yet be planted, excepting the finest double ones. AURICULAS and POLYANTHUSES; no delay must take place in putting these into winter quarters, if not already done. Scatter occasionally amongst the pots a layer of very dry ashes, which will absorb the moisture. CARNATIONS and PICOETTES, finish taking off the layers, and potting them; place them in cold frames, giving plenty of air every day. DAHLIAS, cut down when frost-bitten, and cover the roots with a small hillock of coal-ashes, or take them up at once, and reverse the roots, to allow the moisture to run out of the hollow stem. Number every root, and put them by in a dry, cool place, where no frost can reach them. FUCIAS, done blooming, prune in, and give no water to, for a month. HYACINTHS, finish planting, both in pots and beds. IRISES, both *Spanish* and *English*, plant in a rich soil and open situation. NARCISSUS, pot and plant out in the beds. PINKS, plant out early; fasten firmly, to prevent the frosts from drawing them out. RANUNCULUS-BEDS prepare. *Turban variety* plant in beds and pots, the fine-named varieties do not plant till spring. TULIPS, plant on or about the 10th of the month; choose a dry day for doing this. VERBENAS, take up and pot, dressing-off the straggling branches; their cuttings shelter from early frost. All FLORISTS' FLOWERS in FRAMES and PITS keep moderately dry, clear of weeds, and decaying leaves. Search for SLUGS and other vermin daily.

T. APPLEBY.

KITCHEN-GARDEN.

ARTICHOKES, winter dress. ASPARAGUS-BEDS, dress; attend to that in forcing, and plant in succession. BEANS, plant a good main crop toward the end of the month. BEET (Ired), dig up for storing. BROCOLI, lay down or remove to other warmer situations with good balls of earth; take care not to injure their leaves. CABBAGES, plant or prick out into nursery-beds. CARDOONS, earth up, b. CARROTS, dig up and store, b.; leave or plant out for seed. CAULIFLOWERS, prick out in frames, &c., for winter protection; pay particular attention to airing in all fine weather, both hand-glass crops and otherwise. CELERY, earth-up in dry afternoons, having the earth all forked up previously. COLEWORTS, plant. COMPOSTS, prepare, and always have a supply in the dry for immediate use. CUCUMBERS, attend to in forcing. DRAINING, attend to where required. DUNG, prepare for hotbeds. EARTHING-UP, attend to. ENDIVE, tie up for blanching or otherwise; pay particular attention to protection. GARLIC, plant. HERBARY, clean, &c. HOBING, attend to; on a fine afternoon never lose a favourable opportunity for this or any other kind of work. HORSERADISH, dig up, and lay in the prime for use, and replant. HOTBEDS, make for salading, &c. JERUSALEM ARTICHOKES, dig up and store. LEAVES, continually collect into some corner for future use. LETTUCES, plant in frames; attend to those advancing. MINT, plant; force in hotbed. MUSHROOM-BEDS, make; attend to those in production. ONIONS, in store, look over; (Potato), plant. PARSLEY, plant some in a frame for use in snowy weather. PARSNIPS, dig up and store, b.; leave or plant out for seed. PEAS, of the best early kinds, may be sown toward the middle or end of the month. POTATOES, attend to those in store, or dig up, should any remain out. RUTABAR, clear away decayed leaves, and top dress; also pot off any number of plants that may be required for early forcing, to bring into the forcing structure as wanted. RADISHES, sow, in hotbed. SALSAFY, dig up and store. SCORONERA, dig up and store. SEA-KALE, pay particular attention to the removing of all the decayed leaves, &c.; top-dressing, covered up with fermenting materials, or other modes of forcing. SEEDS, dress and store. SHALLOTS, plant, b. SMALL SALADING, sow; sow in hotbed. SPINACH, thin, earth-stir, and keep clear of decayed and fallen leaves. THINNING, attend to. TRENCH, ridge, &c., vacant ground. TURNIPS, attend to thinning-out, or hoeing the late sown crops, and should the weather be inclined to set in very severe, any number of turnips that are full grown may be taken up, and stored for winter use. Spading-in is often better than the hoe. Always COVER up a little earlier on the appearance of frosty nights. Also look over your BROCOLI quarters of a frosty-looking evening. See if any are fit to cut, or if their leaves need to be broken down over the heads as a protection.

T. WEAVER.

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WEEKLY CALENDAR.

		NOVEMBER 3-9, 1853.	WEATHER NEAR LONDON IN 1852.									
M	D		Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
3	TH	Drab Day Moth; woods.	29.748-29.658	56-32	S.W.	16	59 a. 6	28 a. 4	5 50	2	16 18	307
4	F	Laburnum leafless.	29.840-29.689	60-44	S.	01	VII	26	6 35	3	16 17	308
5	S	GUNPOWDER PLOT, 1605.	29.391-29.306	63-40	S.	05	3	25	7 34	4	16 16	309
6	SUN	24 SUNDAY AFTER TRINITY.	29.843-29.737	58-52	S.W.	05	5	23	8 47	5	16 13	310
7	M	Lombardy Poplar leafless.	29.979-29.862	60-54	S.W.	15	6	21	10 6	6	16 10	311
8	TU	[Mayor's day.]	30.146-30.048	62-56	S.W.	—	8	20	11 26	7	16 6	312
9	W	PR. WALES BORN, 1841. Lord	30.164-30.045	59-48	S.W.	—	10	18	morn.	8	16 0	313

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 56° and 40.1° respectively. The greatest heat, 63°, occurred on the 6th in 1834; and the lowest cold, 20°, on the 3rd in 1845. During the period 89 days were fine, and on 93 rain fell.

NEW PLANTS.

ALONSOA ACUTIFOLIA (*Pointed-leaved Alonsoa*).

THIS was raised by the Horticultural Society from seed sent from Bolivia, by J. B. Pentland, Esq. Its merit is founded on its bright scarlet flowers, which grow in loose terminal clusters. It is a shrubby greenhouse plant, about two feet high. To any one but a botanist it would seem to be *Alonsoa incisefolia*, from which it differs in its anthers being equal to their filaments in length. (*Horticultural Society's Journal*, viii. 318.)

XANTHORRHEA HASTILE (*Spear Yellow Gum*).

It is also known as *X. resinosa*, and as "The Yellow Resin Tree." The genus, which is popularly called "the Grass Trees" and "the Gum Trees," belongs to the Natural Order of the Lilyworts, and to Hexandria Monogynia of Linnæus. Though known as long since as 1803, yet the specimens of the species before us seem to have died without living long enough to have attracted much notice. "At length, says Sir W. J. Hooker, we received a healthy plant from Port Jackson, in 1845, through Mr. Kidd, then placed in temporary charge of the Botanic Garden at Sidney. This blossomed with us in the spring of 1853, while still, we apprehend, comparatively a small plant, the whole height, including the scape and spike, being barely six feet. The scape alone, in its native country, attains a height of 18 or 20 feet, and is used by the natives for making spears (whence the specific name *hastile*) and fish-gigs, being pointed with the teeth of fish or other animals." It looks more like a large Bull-Rush than any other familiar plant with which we can compare, and its designation "Tree," gives a very erroneous idea of its appearance, which is that of a gigantic grass.—(*Botanical Magazine*, t. 4722.)

LITTONIA MODESTA (*Unassuming Littonia*).

THIS is a new genus, named in memory of the late Dr. Samuel Litton, who for twenty-one years was Professor of Botany in the Royal Dublin Society, and the specific name is excellently applicable, for "Dr. Litton's unassuming and retiring disposition prevented his taking that rank in general society to which his acquirements entitled him." It belongs to the Natural Order of Melanthus, and to Hexandria Monogynia of Linnæus. It is a native of Natal, where it was

discovered by John Sanderson, Esq., was sent to Kew by Mr. McKen, from the Natal Garden, and bloomed there in April of the present year.



It is a tuberous-rooted stove plant. "An old, fully-formed tuber is larger than a Spanish Chesnut, and somewhat of the same shape, but having two projecting lobes or horns pointing downwards, with a few hair-like fibres beneath. When planted, a new white tuber is formed from the apex of one of these." From the broad end of this new tuber the stem rises and roots from the pointed end. The stem is climbing, and about three feet long. The flowers are formed of six orange-coloured sepals. It climbs by means of the tendril-like terminations of the leaves. (*Botanical Magazine*, t. 4723.)

At a meeting of the Entomological Society, on the 3rd of October, Dr. Lankester exhibited some insects taken at Newcastle, last month, during the prevalence of the cholera, and forwarded to the Epidemiological Society. He read, also, a letter from a gentleman resident in that town, describing their advent as in thousands. The President said these insects were *Aphides**, and remarks were made by several members, to the effect that, at this season of the year, the migrations of the winged females occurred often in great numbers, and there was no reason to think they were local in Newcastle, or had any reference to the cholera, as had been inferred in the

newspapers, but the hot, moist, stagnant atmosphere, which had been noticed was favourable to the spreading of that disease, would probably induce their rapid development, and would certainly lead to their being more observed than in windy weather. Mr. Saunders remarked, that in India vast numbers of *Diptera* were seen on hot, damp mornings, there termed "cholera weather;" and Mr. Baily observed, that in Warwickshire, in 1849, during the presence of cholera, the people had noticed great swarms of "flies," but he knew not the species, and it was not to be supposed there was any connection between them and the disease.

Mr. Ingpen sent for exhibition leaves of *Chrysanthemums* infested with *Dipterous* mining larvæ, to a

* Since determined, by Mr. Walker, to be of more than one species; but chiefly *A. rumicis*, one of the commonest of the genus.

much greater extent than usual, and asked the name of the species, and for any other information respecting it. They appeared to be the larvæ of *Tiphritis Onopordinis*, and *Artemisia*, concerning which, and the injuries to *Chrysanthemums* and *Celery*, an article, by Mr. Westwood, was published in "London's Gardener's Magazine," in 1839.

Mr. Foxcroft sent for exhibition several of his captures of insects, of all orders, in Perthshire.

Mr. Edwin Shepherd exhibited a hermaphrodite *Aleis consortaria*, the right side, contrary to the rule in such cases, being female.

Mr. Smith exhibited several rare *Hymenoptera*, taken recently at Southend; also, a living male of the parasitic *Anthophorobia nitida*, which was now eleven days old, although Mr. Newport had given the duration of life in the species as, at most, eighteen hours.

Mr. W. W. Saunders exhibited specimens of a *Xylocopa*, from Port Natal, with the nest, consisting of several chambers in a reed; also a mud nest of a *Polopæus*, which, however, had produced only parasitic *Crypti*.

Mr. Stevens exhibited a quantity of insects just received from Mr. Bates, at Santarem, including many species of small *Coleoptera*.

Mr. Hemmings sent for exhibition *Asopia nemoralis* (Scop.), taken June 26th, at Holm Bush, near Henfield, Sussex; and *Simarthis vibrana* (Hub.), taken Sept. 11th, near Hurst, in Sussex—both being new species; also the rare *Phibulapteryx gemmata*, taken at Hurst, September 11th.

Mr. Douglas exhibited specimens of *Gelechia instabilis*, bred from *Chenopodium maritimum*, growing at Brighton, in August.

The President read a curious account, communicated by J. Walter Lea, of Ramsgate, through A. R. Hogan, Esq., of the appearance of a parasitic moth from the pupa of *Lasiocampa Trifolii*, but, unfortunately, by an accident, the whole had been swept away before there was an opportunity of verifying the observation.

Read also a paper on *Bees* destroyed by toads. In the instance observed, several bees were found alive in the toad's stomach; and on *Oniscus armadillo*; and on *Typhlocyba filicum*, a new species, as injurious to cultivated *Ferns*, especially under glass. All by the President.

Read a description of *Lithocolectus irradialia*, a new species taken near Renfrew, by John Scott, Esq.

Read also some extracts from a letter addressed to the Secretary, by the Rev. J. Greene, on the liability of the genus *Notodonta* to the attacks of *Ichnæumons*; and on the general prevalence of mouldiness among caterpillars this year, probably on account of the dampness of the season.

At Hamburg, where five-eighths of the cholera occurred in the lowest parts of the town, but little above the level of the water, "it has been found that incautious exposure to cold and damp has brought on an attack as

rapidly as improper food, or excess." In Italy, in the malarious districts, the ground-floor of the mansion is rarely tenanted; all below the second-floor being deemed no better than a cellar or dark dungeon. And the common people wrap themselves in thick, coarse, woollen garments, for safety against fever. Damp is more trying to the human constitution than mere cold. Let the bulb of a thermometer be heated to the temperature of 95° in a warm hand; or by placing it in the mouth; the exact time it takes to cool down to nearly the warmth of the air, in a very moist, and in a very dry atmosphere, respectively, of equal temperature, will shew by how much more quickly vital heat is momentarily abstracted in the one case than in the other. Almost every grave disease begins with shiverings, and the importance of keeping-up a brisk, active tone in the minute extreme vessels of the skin, as a safeguard against pestilential disease, is a point that deserves our careful study.

We see ruddy faces and out-door employments go together. Our country folks trust more to exercise than extra clothing to keep them warm, and suffer little from epidemics; their little children, who are more in the house, suffer somewhat more. The agricultural labourer's cottage may be as dirty, damp, and overcrowded, as that of the poor man in the town; but out-door habits protect him; and the pure, free, outside air, not very completely excluded from the cottage, is some safeguard to his family.

The black race, who have a powerful skin (in every sense), who are but partially clothed, are anything but particular in their ablutions, preferring mutton-grease to brown soap; whose residences are by no means model cottages; and who have too little care about the quality of the water they drink, possess a remarkable immunity from epidemics; and are almost exclusively taken up with out-door employments. In-door servants, the thorough-bred descendants of negroes, who happen to have devoted themselves to in-door avocations, lose, in two or three generations, much of that physiognomy which has been a family characteristic from the times of the Egyptian monuments.

The Moorish ladies in Spain, leading an in-door life, and being mostly veiled, become very fair and delicate.

Highly civilised men and women take a pride in their artificial wants. They delight to exclude cold, damp, and even sunshine, from their houses, and wrap their limbs in ample clothing, in lieu of healthy exercise in the open air. But what is the case of the poor of our towns, condemned to suffer so many of the impurities of the civilised state, with so few countervailing comforts and appliances? Nature has not a fair chance with them, and their pallid, shivering skins must be as warmly protected, just now, as is the Italian peasants, in a warmer climate than ours, but from which fever is rarely absent.

The class of pestilential diseases marked by an actual outbreak on the skin is more numerous than is generally supposed. Shopmen, clerks, and other young townspeople, are liable to an unsightly eruption on the face

and skin, for which the name *ochlosis* has been invented, from *ochlos*, a crowd. Its cause being confinement and bad air.

A very old word* for pestilence signifies an ulcer; a loss of surface of the skin. One of the moderns has invented the term *dextien enterite*, or inward boil, to characterise a whole host of fevers. A few words are needful to explain the correlative value of these facts.

Anatomy proves the skin to be reflected over the whole surface of the lungs and intestinal canal, where its texture becomes very delicate and sensitive, and where it is styled mucous membrane, which is nothing more than an internal skin, while the skin is a true mucus membrane worn outside.

London tailors offer you the temptation of a coat, which, worn one way, makes an excellent dreadnought wrapper for all sorts of rough work; turn it inside-out, and you have, impromptu, a becoming garment in which to pay a morning visit, or to appear decently at church. Physiologists have maintained the possibility of turning inside-out the whole system of certain pliant animals, so that the stomach and bowels shall become a skin, and the skin a digestive apparatus; but, indeed, no such experiment is needed to convince us that the internal and external skin is one.

The whole of this immense surface of skin, then, feels for each part; and each part sympathises, again, with the condition of the whole. A few every-day examples I must here beg leave to adduce. The sort of food an animal eats will tell on the sleekness or otherwise of his coat; less food will suffice if he be tolerably protected from cold. A cold plunge into the sea excites an enormous appetite. The complexion reveals the state of the drunkard's stomach, and of the lungs of the consumptive man. A brisk emetic, or a warm bath, will indifferently well ward off an attack of fever, or of influenza.

These important surfaces possess very different powers of resistance to noxious agents at different seasons, when in a sound, or when in an unsound, state. A very slight flaw in the roof of the house, and we are drop dry no longer; a very small leak in the side of a good ship, and she is sea worthy no longer. The strength of a fortress is only the strength of its weakest point; and the strength of a chain is the strength of the weakest link. An anatomist may safely work at awfully decomposed subjects as long as he is well, the skin of his hands whole, his lungs sound, and his digestion all right. But a very slight sore on one of his fingers is enough to admit into his system the deadly poison amongst which he had previously worked with impunity; and if he (of all men) should neglect a cough, or allow a slight bowel complaint to go on from bad to worse, then he is in danger of being run down by hectic or diarrhœa; whether from a general lowering

of tone, or whether from some slight sore or abrasion of the internal surface of the bowel favouring the access of the specific poison. Not less dangerous is it "*when the cholera has actually broken out and become epidemic in any district or locality*," to neglect slight derangements of the "mucous membranes," which, at any other time or place, *might judiciously be left to get well of themselves*. During a bad epidemic state of the air "the normal powers of the constitution" are suspended; things can be left to themselves no longer, and stringent coercive measures are requisite to repress the general tendency to go on from bad to worse.

The cottage gardener will understand the general bearing of these remarks, knowing the importance of a lively hue, and healthy tone of the skin, among his own favourites. He can see all the skin of his interesting patients. The outer skin only of ours is visible. He knows the dire import of a little speck or spot on the delicate surface, *in an unhealthy season*, and how much then depends on taking things in time; and at all times how injurious damp is, and how necessary are proper warmth, ventilation, cleanliness, and nutriment, to keep up the good looks of the inanimate domestic companions of civilised man, and ministers to his enjoyments. How much more should we not care for fellow-creatures similarly confined, but not always similarly cared for. Is not a man more than a plant? J. J.

It is no matter of surprise to us to hear the many suggestions that are now being brought forward with a view to several alterations in the present system of Poultry Exhibitions. The object of such shows is twofold; the exhibitor, in the first place, being thus rewarded by public approbation for his skill and judgment; while intending purchasers have the advantage of comparison to guide their selections, and regulate their standard of excellence. Now, whatever regulations might best combine these two points would plainly best answer the intentions of such Associations. Among other proposals, we find a wish expressed to see pens with a smaller number of birds than are now usually required; while a separation of the sexes is also desired by some.

In reference to the first suggestion, the larger shows already give every opportunity of showing to poultry-keepers on a large, or on a small scale. Any one, for instance, who wishes to compete at Birmingham, may do so either in the class for "*a cock and three hens*," or in that for "*a cock and one hen*." Smaller provincial Societies, where funds may be unequal to this subdivision, offer their premiums for "*a cock and two hens*." We hardly see how this can be improved; and to the proposition of the judge being called upon, not only to bestow the prize on the best pen, but also to select out of these pens, for honour, the best birds, male and female, in the different classes, we must decidedly object, as affording constant occasion for cavilling and discontent, while it confines the principle on which the premiums to pens have been awarded.

* In Lee's Hebrew Grammar, in the letter D, *Davar*, meaning a word; *Dever*, a pestilence. Roots—*Dhabara*, he inscribed, and *Dabara*, it was ulcerated. You have *Dhabr*, from the first, signifying a writing; and *Dhabir*, learned; and from the second, *Dabr*, death, of similar import with *Dever*, a pestilence, &c. An orientalist might say a pestilence is a divine lesson, written on (or in) our bodies, for our learning; and, in another sense, he might ask, what ulcer, or what pest, is so foul as bad writing!

This brings us to the second point—a general separation of the sexes in the Show-room. It will hardly, we imagine, be contested, but that such an arrangement would greatly mar the effect of the Exhibition. In the female compartments, the greater brilliancy of the male bird would be sadly missed, and the space assigned to the latter would again suffer in effect from the loss of contrast with the subdued tones of the plumage of the hens and pullets. There would be one advantage, it is true, gained for any one who required a bird of either sex without purchasing either a whole pen, or birds of different sexes of the same blood. But we cannot look upon this as counterbalancing the drawbacks already alluded to; we would, therefore, provide for it in another manner. But when we have to speak of the sales effected on these occasions, we would certainly ask for a further consideration of the rule which enforces the affixing of a price, whether prohibitory or otherwise. Such prohibitory prices often lead to misconception on the part of the public; for a pen labeled at 100 guineas, or more, induces scornful remarks at the absurdity of fancy prices, which, to say the least, are far from beneficial to the cause of those who have lately encouraged Poultry-keeping, under the persuasion of its being a branch of agricultural economy hitherto greatly neglected. The owners of such pens, indeed, are, generally speaking, perfectly sincere in this expression of their unwillingness to let favourite specimens pass out of their possession on any terms; but how much better would it be to allow the ticket "*not to be sold*" to appear in such instances. The special purpose of the rule which states that the object of prices being assigned to each lot is to benefit purchasers constantly fails, for few really prohibitory-priced pens are then sold, and the Society suffers, also, in some cases, by such birds being subsequently disposed of by private contract at a lower figure, when the five per cent. commission is necessarily lost to their receipts. Under this idea, the alteration has already been made by the managers of some exhibitions, where "*not to be sold*" is to replace the prohibitory price. At all events, Secretaries will do well to secure the correctness of the sums at which birds are valued in their published catalogues, by carefully comparing them with the returns of their owners in the forms of entry. Many have been the mistakes from inattention to this part of their duty during the present year, and, consequently, great the dissatisfaction, with both sellers and buyers, when the error has become apparent.

Prize-lists for the present season are now, with probably very few exceptions, completed; so that it is in good time that the question of what alterations in their detail may be generally advisable for another year is now mooted. We doubt, at present, whether any great changes will be found desirable; but the addition of a separate class in each breed for the male birds of all ages, to be chosen separately, would not interfere with the present system; while, for the purposes of the breeder, great advantages would, probably, be thereby obtained.

W.

MEETING OF THE HORTICULTURAL SOCIETY.—OCTOBER 18, 1853.

PROVIDED it is dry overhead, it matters little what kind of weather it is in London, for in London, be it hot or cold, sunshine or overcast, you are in a cloud of smoke, and dirt, and filth, and all sorts of bad smells, as long as you are there, or can bear it; but when you get used to it, there is not such another place as London in this world for everything you can think of or wish for. In every other part of England, the 18th of October was the finest day we had since the middle of August, but in London you could not make out a soldier from a policeman across the street. Nothing but smoke, and noises, and crowds of people, go where you would; yet we had an excellent Exhibition of Fruits and Flowers, new things as well, both in fruits and flowers.

One new fruiting hardy plant was shown to me behind the scenes, and I tasted the fruit of it, and relished it indeed; but I was not to say a word about it till next year. Of *Orchids*, there were some large specimens of *Dendrobiums*; a fine plant of *Vanda cærulea*, from the Messrs. Rollinson, of Tooting. It was lighter in colour than those that were shown last autumn; but for this most of us were prepared, and we heard, in the lecture, that many other flowers coloured badly, and that outdoor fruit wanted flavour, owing to the unusual bad season. A letter was read to us from a gentleman in Surrey, who sent wonderful fine *Onions*, of which I shall speak by-and-by, in which he said there was no summer at all this season in his part of the country. *Angræcum bifolium*, with several racemes of starchy, white, waxy blossoms hanging down from the bottom of the pseudo-bulbs, looking very pretty. *Eriopsis biloba*, a strong Eria-looking plant, with a spike of ten dull brown flowers. *Oncidium varicosum*, the very best of all the yellow-flowering *Oncids*; the flowers put you in mind of the large-flowering variety of *Epidendrum amphiatum*, which we always see at the May shows; everyone who grows *Orchids* ought to possess this *Oncidium*. *Sophranitis grandiflora*, another gem of the first water, in the shape of a little creeping plant, with large crimson flowers of great substance,—“a charming plant,” as the lecturer remarked. *Miltonia Moreletii*, a plant as much like *Miltonia grandiflora* as can be, but the flowers are considerably larger, and of the same colour all over,—a light shade of purple. *Lalia Perrinii*, a well-known old plant, I believe, with beautiful deep lilac sepals and petals, and a rich purple lip. A new *Catleya*, at least quite new to me, called *Pinelii*; this, also, had lilac sepals and petals, and a very rich purple lip, the flower under a medium size, but that might be owing to the age and smallness of the plant—a very pretty thing. All the above *Orchids* were from the Messrs. Rollinson, who also sent other plants, among which was the new Zebra-like *Aphelandra*, which was exhibited the last two summers from Mr. Van Houte, of Ghent, only a little morsel last May twelvemonth, and a little bigger last summer; but this plant of it was from three to four feet high, with a central spike of bright yellow flowers at the top. Besides the white stripes on the leaves, Zebra-fashion, this is a very good addition to the early winter plants, which come in so useful for country gardeners to bring into the rooms or warm conservatories which are kept as show houses.

The right way to grow all these *Aphelandras* is not to begin too early with them in the spring. Any of them that are now in flower, or that will be done flowering before Christmas, should have a few inches of the tops cut off, with the dead flower-spikes, and then to treat them almost like an old Cactus till the middle of April, or even to the end of April, in some dry, warm, out-of-the-way place; then to be cut down as close as an old *Geranium*, started, and shaken out of the soil,

after growth is fairly begun, to have the roots well cut in, to use very rich soil, and pots as small as the roots will go into, strong bottom-heat in a frame, three shifts before the end of July, and to be kept at it as closely and as fast as they can go, or be pushed on to the end of August; then a halt on short commons for six weeks; after that, the very finest spikes of flowers will soon come, which cannot be surpassed by any other mode of culture. The old *Justicia coccinea*, under this treatment, and not more than two years old, nor allowed much pot room, gives the brightest flower of all the Acanthads in the winter and early spring. The great secret with plants of the whole order, which flower on the wood made the same season, is to give them a very large rest after flowering, and to grow them very quick when once they are set in motion.

Dichorisandra thyrsiflora, the old variety, was also there, and from the Society's garden, I believe. This, also, is a very useful plant to come into the warm conservatory at this season, where it lasts a long while in bloom, and after blooming it may rest till May. Many years since, we used to set all these kinds of plants to grow by the end of February, when they would grow long and lanky, and the flowers would not be half so good or so numerous. There is a far better variety than this *thyrsiflora*, with the flowers more purplish or dark blue. I saw it in bloom this time last year, in the large conservatory at Kew; and I was told that Sir W. Hooker could not see any botanical difference between it and the old one to justify a new name; but it should be enquired after in the nurseries, for it is a downright good flower.

There were cut branches of the *Cestrum aurantiacum*, from the conservatory of the Society—a plant that is almost always in flower; and we were told that some one out in Spain, or somewhere that way, to whom the Society gave it some years ago, reports that it is quite hardy there, and is in blossom all the year round. I wish I had known that ten days sooner, and off it should have gone to New Zealand. As it is, what a nice tree to shade the Arcadian shepherds in place of Virgil's *Fagi*, whether these were Beeches or Chesnuts. It comes from cuttings as freely as Willows, and, like them, nine-inch cuttings of three or four years old might be packed in an old boot, and sent to Melbourne by the next steamer, and nine out of ten of them would grow if they were put six inches deep in the ground, and the earth pressed hard to them.

NEW PLANTS.—There was one new plant here to-day, that I am quite sure will have as extensive a sale, and as wide circulation, as *Robinson's Defiance Verbena*. Everybody must have it—it is the drollest thing I ever saw, to begin with. There is not another flower on earth like it, I should think; and it is one of the very prettiest plants that a lady could place on her work-table to the bargain. The plant was not more than six or eight inches high, nor much above a foot in diameter, and yet it had on one hundred flowers; and such flowers! Bright red bladders dangling from slender footstalks, with a nipple-like ending at the bottom; the size as big as one of the large *Calceolarias*, with a small yellow hood (the real flower) on the top, opening in the front, where you could blow the bladder till it burst. There is not a botanist on earth who could give a more natural definition of it; and I had to borrow a flower, which is now in my left hand while the pen is scratching over this account of it. The plant is from the high parts of the Neilghery range in India, and will be half-hardy here. It will come easily from cuttings, and I think it will seed. Last of all, it is one of the Indian Balsams, and called *Impatiens Jerdonia*, after Mrs. Dr. Jerdon, by Dr. Wight. It was figured lately in the *Botanical Magazine*, but from a very bad specimen, as the figure gives no idea of the

beauty of the flower. The red of the flower is of the same tint as that in the flower of *Dielytra spectabilis*. The plant is evidently an Alpine plant on the range, the stems being old-fashioned, woody-looking things; "short and stubby," as some of our friends would say. The leaves are small, healthy-looking, and without any coarseness, as is often the case in this tribe. Last of all, Mr. Veitch, of the Exotic Nursery, Chelsea, was the lucky exhibitor of it. I saw it also with Mr. Jackson; and it is at Kew; but we shall have it out by-and-by.

The *Fuchsia spectabilis* was not more earnestly recommended, on its first appearance, by any one than by THE COTTAGE GARDENER; but a most beautiful cross from it by the pollen of *Fuchsia serratifolia* was better explained and put forth, on this occasion, in the lecture, than I can pretend to do. Nevertheless, I shall have a try at it; for there is nothing I like better than to have a real good new plant, to pull out its character and history. This is a new cross—I mean new as between two distinct natural species—which, after all, I really believe to be the only and the best mode of getting new Fuchsias to satisfy our taste for novelty. After fifteen years at crossing varieties of Fuchsias by the thousand, what have we got? Just four good plants, and hardly that—a white, and the other three are so many modifications of the old *coccinea*, or of *gracilis*, and *globosa*. I say, looking at all this, and seeing that *serratifolia*, *cordifolia*, and *spectabilis*, are capable of giving us a new race of Fuchsias that will flower all the winter, and on through the spring, until the old ones come in in May, I am now more confirmed than ever that the species must be worked, or crossed, together, in preference to the varieties of garden seedlings. Last winter, I knew a large, straggling plant of *Fuchsia cordifolia* that flowered as well as any Fuchsia I ever saw till the end of March; from this time, and during the preceding summer, it was so neglected, in the back regions, that it was leafless, and supposed dead for four months; and it was only on observing flower-buds coming on the leafless branches, in October, that the plant was watered, and taken in-doors, where it did so well that I then suggested a cross from it by *serratifolia*, little knowing at the time that a cross for winter flowering from a better plant, *spectabilis*, was in existence; but so it was, and we had a plant of it at this meeting nearly four feet high, and a yard right through it, composed of so many shoots from near the surface of the pot, and every branch promising to go on flowering till late in the spring. I took it to be an entire new species the moment I saw it—an improvement on *spectabilis*, but of that strain; and the young wood, the underside of its large leaves, are of deep red or blood-colour, as in *spectabilis*. The upper surface of the leaves is of the most peculiar tint—a greenish-purple, or, as you sometimes see the leaves on the shaded side of a purple Beech, and they are of the most healthy looks. The flowers are somewhat larger and more stout than those of *spectabilis*; but let us say fully as good as those of *spectabilis*; and, as that has caused a great disappointment, owing to the difficulty of growing it healthy, this is just a proper substitute for it. It was sent by Mr. Veitch, with the Indian Balsam, and he named it *Dominiana*, after Mr. Dominy, the plant foreman in his establishment for the last twenty years, who was brought up, and "brought out," in this very establishment; and who, after the hundreds of good new plants that must have passed under his hands, allowed this new one to be called after himself. He must have had a great deal of confidence in its merits, from the very first seed-leaf; and he is not disappointed.

Messrs. Standish and Noble sent a new shrubby *Calceolaria*, called *hyssopifolia*, which promises to be very useful for bedding and for crossing. The habit is of the best stamp for a bed, being a close grower, small,

narrow leaves, and quite woody at the bottom. The flowers are not unlike those of *Calceolaria bicolor*, but smaller; a light sulphur-colour. If this were to be crossed with only the more woody kinds which we now possess, an improved race of bedders would soon appear, and be very useful.

Mr. Henderson, of the Pine Apple Place Nursery, sent a little specimen of the new yellow-flowering *Begonia xyanthina*, and it was remarked how richly this family is now in distinct colours—all the shades from white to pink, rose and deep red, cinnamon and yellow; and as they are readily crossed, these colours and shades can be blended together, and other new shades may thus be produced in great variety.

In a collection of more than two dozens of cut flowers of *Annals*, from the garden of the Society, was an excellent new *Coreopsis* called *coronaria*, with the flowers much in the way of those of *C. Drummondii*, but with the eye streaked all round, with brown markings like some of the older ones. If the habit of this plant is as good as that of *Drummondii* it will be a useful addition to the family for bedding. This puts me in mind, that I saw quantities of a new variety of *Coreopsis bicolor*, at Claremont, this season, which looks in leaf and flower exactly like the old one, but the plant is only a few inches high; this is a rare good addition for the Flower-garden. Mr. Mallison had the seeds of it from France, but it must soon come into general cultivation.

There was a very curious pot-plant in the collection from the society, called *Perilla japonica*, of a dingy purple-colour all over, with the looks and smell of some soft herb for seasoning in the kitchen. It would make a nice rock-plant in summer, but of its flowers no good or bad can be said, as they are hardly to be seen.

Another plant they sent to show how ugly the flowers are—this was the new straw-coloured *Tropaeolum*, called after some foreigner (*Shurmanianum*), to whom the Society must owe some grudge or another, or they would never have taken such pains to insult its namesake.

Two new annuals, which I mentioned at the time of the July show, were much praised, and deservedly so, as neutral bedders that keep in bloom from June till the frost came. They are little camomile-like plants, called *Cenia formosa* and *turbinata*; one with yellow, and one with white flowers; but the outside florets are wanting in both, and it is only the daisy-centre-like flowers, coming as thick as grass, that give them effect—first in coloured buds not bigger than a pin's head, and swelling out to the size of a Batchelor's Button—they are also good rock plants, and no doubt the Society has saved seeds of them enough for all the members next year.

They sent a beautiful specimen of the yellow *Pompona Chrysanthemum*, called *Hendersonii*, the earliest of the race, and the only one brought out on this occasion.

Gypsophylla Stereii was also highly spoken of in the lecture—a white flowering one.

FRUIT.—There was a great competition in fruit, particularly Pears and Apples. There were ten competitors with Pears, and seven for green Peas in pods; Her Majesty's fruit taking the first prize by long odds. Some of the Pears were excellent; but really, as to fruit, were it not for the look of the thing, no out-of-door fruit is worth dishing for table this season. Here I tasted some of the best October Pears, at least, I tried to do so, but there was no taste that I could make out at all; but as it is some consolation to know that we are not alone in a dilemma, I must mention, that Mr. Solomons, of Covent Garden, exhibited splendid looking Pears from the south of France, but they were not a whit better flavoured than if they had come from "the haughs of Cromdale." Mr. Rivers, the great Rose-grower, sent a tray of Pears to show the difference between this, that, and the other, when grown in different ways; as, for instance, *Marie Louise*, from a wall; a standard and a dwarf or pyramidal

tree; a good idea in ordinary seasons. Most fruit sent to table, and Pears more particularly, in large families, having a written ticket on the dish, giving the name, and Mr. Rivers' plan, would be of additional interest. Suppose you have two match dishes of Pears, &c., and one is marked from a wall of such and such aspect, the other from a standard or pyramid, and so forth; it is wonderful how discussions thus raised save the wine after dinner.

There were some good-looking *Pine Apples*. The *Barbarossa Grapes* were splendid, from Mr. Butcher, of Stratford-on-Avon, who first sent it out. A large dish of *Black Morocco Grapes* would make a good advertisement in a fruiterer's window—all that this kind is good for, as we were told indirectly. There was a new seedling *White Grape* from Mr. Bushby, Stockwood Park, with a letter, saying that it was a cross from the *Black Hamburg*, by the pollen of the *Sweet Water*, applied in 1849, which some in the room very much doubted; but that is nothing, here or there; for the Grape is really of first-rate quality. There were not enough for all to taste, and it is not good for gardeners to scramble for fruit anywhere, much less before their betters, so I lost the chance; but I have great faith in the statement made, that it is the best seedling Grape ever tasted in that room.

There were six *Onions* from R. Crawshaw, Esq., of Crosby Hall, Surrey, as fine as ever came from Portugal, or anywhere else, and Mr. Crawshaw wrote to say, that the produce, at the same rate as his bed, would be just twenty tons of Onions to the acre; and that in a season that was "all winter" in his part of Surrey; but here, about Kingston, we had nine fine days this summer.

D. BEATON.

SOFT-WOODED PLANTS.

IMPATIENS (OR BALSAMINA) LATIFOLIA.

A PERSON who had been in the habit of growing the Garden Balsam well, both in-doors and out, could not, in investigating the plant and flower, believe that the above is a Balsam at all. If the flower had been large and double, there would have been no doubt on the matter, especially if it had possessed crackling, twisting, ripe seed-pods, which it has never done with us. Florist, however, though he was, he resolved to give this single-blooming species a place in his greenhouse and border. Fond as our florist friends, in general, are of double flowers, they are by no means insensible to the beauty of single ones. Not along ago, I was asked anxiously for cuttings of the *Hibiscus Rosa sinensis*, but they were at once declined when known to be double. There is no analogy, however, between the superior beauties of the single *Hibiscus* over the double; and the single *Impatiens latifolia* over a fine double *Impatiens hortensis*, or Garden Balsam; and yet, when its continuous blooming during the summer months is taken into consideration, there are many worse things petted and cared for.

It is now seldom we see such interesting kinds as *Impatiens longicornu*, with its long-horned spur, or *Impatiens glanduligera*, with its strong, shrubby character, and its purple flowers. Treating such plants, either in border or pots, in such rich soil as we treated the Garden Balsam, the leaves and stems were too gross to leave room enough for the flowers to show themselves. The same remark applies to *latifolia*, with its pinkish-red flowers, though far from being so strong in habit as *glanduligera*. Grown in poor soil, out-of-doors, in a sheltered place, after June, or inside, in a pot, it blooms very freely, and is rather a pretty object for the greenhouse-shelf in summer.

Preserving and Propagating.—Like the whole species that come from India, the plant will stand little or no frost, and yet, like many of its congeners that enjoy a

moist atmosphere and a moderate temperature on elevated positions in Silket and Nepal, it delights in an open, airy greenhouse, from the end of May to the middle of October. In July or August, a few cuttings should be taken off three or four inches long, cut across at a joint, two or three of the lower leaves removed, the base of the cutting allowed to dry for a day, while the top of the cutting is moistened and covered with a green leaf, to prevent the evaporating of its juices, and then inserted in sandy soil, round the sides of a well-drained pot, and placed in a close cold frame, or one containing the least amount of bottom-heat, as in a cucumber or melon box. Here they will soon strike, and must be exposed to air by degrees. They will want water during winter, but it must be given with great caution, only when wanted, if the plants are kept cool in a greenhouse, say from 45° to 48°; if kept warmer, as in a cool stove, ranging from 50° to 60°, there need be less care in watering. Old plants may also be pruned back, and if there is only a greenhouse, kept cool all the winter. I would prefer this mode, exposing the plants to as much sun and air as possible, before and after the smaller shoots were pruned back, and then keeping them dryish over the winter, merely preserving the buds alive, and then giving them an extra heat in March or April, by placing them in a slight hotbed, or any house or pit, ranging from 55° to 60°. Here they will soon grow freely, and cuttings being taken off, they will strike in a few days, and may then be grown rapidly on. Young plants always bloom best.

2. *Soil and General Management.*—In potting, at first I have used peat, leaf mould, and sandy loam; but as the shiftings are given loam is almost solely used, and this has a tendency to make the plant more robust and compact. An eight or a twelve-inch pot will grow a bushy plant from three feet in height, and wide in proportion. In training, the chief thing is to stop all the principal shoots until you get the plant well furnished all over with shoots nearly equal in strength, and when these are unstopped each will soon begin to produce blooms freely from near their points, and continue to do so so long as the points continue to elongate, and you give them a sufficiency of light and heat. In a cool stove they would bloom all the winter. When they have bloomed some time, a little top-dressing of cow-dung, or manure-waterings, will invigorate them. They will also delight in a dash of water over-head after a sunny day in summer. If kept open and airy an insect will seldom trouble them. If kept close, even though in a moist atmosphere, they will have the green fly, and become spindly. If kept rather light, but warm, as in a plant stove, they will attract the red spider by myriads. With a cool, airy house in summer, and a dash from the syringe, allowing a little water to fall on the stage or ground around them, there is no danger. Writing for this department, I speak of it merely as a summer ornament under glass. I have found it showy and useful in a glass-covered veranda.

IMPATIENS LATIFOLIA ALBA.

This is a still more beautiful thing, and a much later introduction. It blooms even more freely than the red variety on the points of the young shoots, and you may, therefore, blow it in a three-inch pot or a twelve; it also grows very fast. I obtained a very small plant after Midsummer; rattled it on with stopping, and shifting, in a close pit, with a little heat; and in August, September, and the first half of October, it was a very pretty herbaceous bush, in a twelve-inch pot in the greenhouse. The flowers are large, pure white, and produced in great abundance. As it seemed more tender than the red, I gave it a little peat in its later shiftings. The habit of the plant is good, close, and compact, and the foliage neat and well coloured. It strikes easily in a

very few days. Valuing it chiefly as a good greenhouse ornament, I will try it in winter, in a night temperature of 45°, and keeping it rather dry; but in case it will not stand that, I will keep a few cuttings in a temperature a little higher. I am the more inclined to this, as I forget all that has been said as to *when* and *where* it came from. The habit, in such a house, and the colours, are both desirable. During the dull weather, lately, some of the leaves have fallen; and the flowers are neither so bright, nor half the size they were a fortnight ago.

PENTAS CARNEA.

This is another beautiful suffruticose evergreen, herbaceous plant, from South Africa, with corymb-like terminal bunches of small wax-like lilac flowers, but which is never seen to advantage, when kept as it generally is in a plant-stove. An intermediate house in spring, and a cool, airy position after the flower-buds appear, are the circumstances in which it flourishes to advantage. I feel myself often bothered with colours, and imagine sometimes that my bumpology must be at fault in this respect. Sometime ago I was visited by a respectable farmer, who told me he could not distinguish colours at all, and his friends verified the fact. The most he could ever do was to think he could discover some difference between a red coat and a black one on the backs of those that were riding after the hounds. This seemed very strange, and that, too, in the case of a man well versed in literary and scientific life. Now, the most of the books, and some of my friends, will style the colour of the flowers of this plant *pink*, while, to my eye, it has scarcely ever got beyond a decent lilac. Be this as it may, it is a pretty thing when grown as a compact bush in an open, airy, cool temperature, and then the slightest tinge of pink may be observable. I have, therefore, used it chiefly in the greenhouse for summer decoration; but the basis of my operations is allowing it to become a deciduous plant in the winter months. In a cool greenhouse, the leaves will lose their greenness by the middle of October, at least in such a season as this. In a house with no higher temperature than 45° they will be quite yellow, or have fallen off by the end of November. In such a temperature, but now and then nearing 50°, the plants, if kept rather dry, will remain safe until February, when those who intend growing it well would require to have a forcing house, a pit, propagating frame, &c., commanding a temperature of from 55° to 65°. Here the plant, after slight pruning, should be put, heat applied gradually, and, when the buds are advancing freely, watered, and ere long shifted in aerated soil. The upper shoots, when three inches long, may be slipped off close to the old stem, cut clean across, and inserted in sandy soil round the sides of a well-drained pot, and then the pot plunged in such a hotbed. The shoots left form the skeleton for the future plant. A few days after the extra shoots as cuttings are removed, the plant should be shifted, getting rid of the most of the old soil, and using fresh compost, and pruning in any bad roots. Put in the above heat again (the bottom-heat, if procurable, being from 5° to 10° higher), and as soon as growth is proceeding freely examine your shoots, stop them, and tie them down, so as to get the necessary number of shoots to start at once that you wish the plants to have, recollecting that each of these will have its terminal bunch of bloom. As a guide, even here, it is necessary to mention, that when continuous and early blooming, rather than a great and uniform show all over the plant at the same time, are the objects, then you need not prosecute the stopping too closely; to obtain a great number of shoots uniform in size—as supposing you had only six or eight shoots, these would yield you an equal number of masses of bloom, and, before they were faded, the upper buds from the axils of

the leaves would be growing into shoots, to have their blooms in succession. By this means we have had succession of bloom on the same plant from June to October.

In treating the plant as above, in a moderate hotbed, it will be advisable to move the pot out of bottom-heat when the shoots are above six inches in length, giving the plant more air, and gradually using it to a colder and more airy atmosphere. The young cuttings, potted off when struck, plunged in a little bottom-heat again, stopped, and thus encouraged to grow, will make nice shrubby plants for the greenhouse by the middle of July, and these are generally better than older ones for keeping, or for a following year. The soil I have generally used is a compost of heath-mould and loam, with a free allowance of charcoal, as drainage, and mixed with the compost, and surface-dressings of cow-dung when the flower-buds appeared. Treated as a stove-plant, it is very subject to the red spider; but treated in this intermediate way, giving extra heat only in the first stages of its growth, it is seldom that anything interferes with it.

TROPÆOLUM LOBBIANUM

(Var. TRIOMPHE DE GAND).

The preceding have but little cheering about them just now, inasmuch, as those, with little more glass than a greenhouse, will merely have to be thinking where they can keep the objects at the warmest end, and yet out of sight, not to interfere with objects more beautiful. This latter plant is, however, an exception, being in its highest beauty during the winter months. Our chief reason for noticing it here is on account of two queries respecting it. 1st. "My plant is getting very unsightly; the large leaves are getting yellow and falling; and from their axils, small, spindly shoots are coming: what shall I do?" Pick off the old leaves as they change colour; top-dress, or give manure-water to the plants, as it is these young side-shoots, in this species, that produce bloom so freely. Hence, the reason why it is so well fitted for winter blooming. It blooms on the lateral instead of the main shoots; and, as a general rule, the better the first shoots are grown, the better will the plant be supplied with these secondary flowering shoots. Hence, I never did much good with the species in summer. 2ndly. "I saw this *Triomphe* highly commended for size, &c., but I do not like it so well as the smaller flowered species?" Neither do I. I took the newspapers and magazines as my guide. The bloom is too large, and too like the common red variety of *Tropæolum majus*, to save it in some peoples estimation from being vulgar. It would require good spectacles, taking the blooms alone, to detect this *Triomphe* among a bank of *Majus*; but then *Triomphe* will bloom better in winter, and novelty must at times be paid for.

R. FISH.

THE GLADIOLUS.

The characteristics of a Florist's-flower are "one that has been improved by cross-breeding or hybridization," and thereby improving its form, colour, and size. The Gladiolus has been so altered; witness the great number of improved varieties now in cultivation, and these are annually increasing; claiming it, then, as one of the flowers that I write about, I purpose devoting a few columns to its culture as a Florist's flower, and, as it is now the season for planting the bulbs, I shall commence with the formation of the bed, the soil, and planting.

The Bed.—The situation of the bed should be in an open part of the garden, sheltered at a distance by either a tall hedge or a wall. This shelter is necessary, because the flower-stems of many varieties grow rather tall, and

the wind, if they are fully exposed to it, is apt to twist them off. Then, again, the situation should, if possible, be dry; for if the soil is heavy and wet the bulbs will decay, and the tops perish just at the time when expectation is on the eve of being gratified. To prevent this grievous disappointment, wherever there is the least fear of excessive moisture at the root, very effective drainage must be enforced. These points of a sheltered situation, and a dry subsoil being present, the trouble of forming the bed is considerably reduced. In that case, a slight drainage of a few inches will be sufficient; but in case of the situation being low, and the subsoil, in consequence, wet, then effective drainage must be insisted on. To form the bed, proceed as follows:—Stretch a line on one side of the bed, press a spade downwards with the foot, rather slanting inward, then remove the line to the other side of the bed, and cut the soil with the spade on that side likewise, and then cut both ends; commence at one end, and throw out the soil one-half to one side, and the other half to the opposite side. In a dry situation, from fifteen to eighteen inches will be sufficient, but in a low, wet one, throw it out eighteen inches deep; then, in the dry ground, place at the bottom of the bed about three inches of rough gravel or brick-rubbish. All the finer gravel, or lime, that may be among the brick-rubble, should be sifted out, so that the drainage shall be effectual. In damp, low situations, the gravel or brick-rubble should be at least six inches thick, with an outlet for the water into a regular drain. If the water cannot be drained off, then the bed must be raised from four to six inches above the general level of the garden, for the Gladiolus is extremely impatient of moisture. Should the natural soil be heavy and wet, on account of its having a large proportion of clay in it, then it will be necessary to form or make an artificial soil for them.

This leads me to describe *the Soil* the Gladiolus thrives best in, and that is the sometimes-abused term *compost* (as if every garden soil was not a compost). My practice has always been to form a compost for this bulb with the following materials, and in the following proportions:—three barrows of good sound loam, such as we meet with in dry pastures; one barrow of leaf mould; one barrow of heath mould, and a liberal mixture of river sand, adding about half-a-barrow of thoroughly decomposed cow-dung or hotbed manure. For a large bed, the operator may substitute cart loads for barrow loads, only let him use the same proportions. If the natural soil is good loam, then add the other ingredients to form the compost, and there is no doubt the bed will then be filled with that soil or compost which will suit the plants admirably. Fill the bed with the compost sufficiently to raise it, in dry situations, two or three inches above the walks; but in low, wet situations, raise it full six inches above the walk. In the latter case, it will be desirable to have some kind of edging to keep the soil up, and I know none better than Mr. Hogg's tiles, such as he advertises. These are much better than any other kind of edging I have seen. Living edgings, such as Box or Thirt, are very objectionable indeed; in the first place, they harbour slugs, and other creeping vermin; and, secondly, they impoverish the soil greatly near the edge of the bed. This preparative, or forming of the bed, and filling in the compost, would be much better if done long before this. The middle of September would be a proper and suitable season; but if delayed till this month (October), the only thing then to attend to will be to raise the bed an inch or two higher to allow for settling.

Planting.—The right season for this (important for all bulbs) operation, is the latter end of October, or the first week in November, though the late-flowering species

and varieties may be successfully planted till Christmas. By late-blooming, I mean the *Gladiolus psittacinus*, and the hybrids originated from that species. Draw drills across the bed three or four inches deep, and six inches apart; plant the bulbs in the drills, the smaller varieties at four inches distance from each other, and the larger-growing ones, such as *Gandavensis*, six inches. As these bulbs are rather flat ones, the drills may be levelled down with a garden rake, the tines of which should be rather distant, so as to leave the surface rather rough. If it is made very fine and smooth the heavy rains will cause the surface to become cakey and hard, and then the rains will run off into the walks. In the spring, just after the plants make their appearance, stir the surface gently with a small three-pronged fork, breaking the cakes on the top, should there be any. The only after-management is to place neat sticks to each plant, tying the flower-stems to them as they grow, to prevent the wind from twisting them off, which they are very liable to do if left without sticks. Should the weather in spring prove dry, a liberal watering will be necessary, and the plants should be freely syringed, also, in dry weather, to keep down the red spider. T. APPLEY.

(To be continued.)

STOVE FERNS.

(Continued from page 63.)

BLECHNUM INTERMEDIUM (Intermediate).—A pretty dwarf Brazilian Fern, easily cultivated, and suitable for small houses. It only attains six or eight inches in height even when well-grown. The fronds are pinnate, but only have two pair of pinnae; the end one is about four inches long. The stems are slightly coloured with red, which adds greatly to their beauty.

B. LANCEOLA (Small Lance-headed).—This is also a Brazilian dwarf Fern, growing only six inches long. The fronds are simple—that is, with only one entire leaf of a deep dark green. It has, also, the peculiarity of having all the fronds, when fully grown, seed-bearing, or fertile. It is easily grown and increased by division.

B. OCCIDENTALE (Western).—From the West Indies and Brazil. Very similar to *B. triangulare*, but may be distinguished from that species by the terminal leaf having spines on the margin, and the foliage being of a light green. It is pinnate, and the pinnae are usually opposite, whereas those of *triangulare* are alternate. The fronds are nearly a foot long. Easily increased by its creeping rhizoma.

B. SERRULATUM (Saw-leaved).—Native of Mauritius. A rather tall species; the fronds grow two feet long. They are pinnate, with a fleshy saw-like margin to each leaf, or pinnae; the rhizoma is peculiarly lengthened out, and by dividing it the plant may be increased easily. It is a very elegant Fern, but rather scarce.

CALLIPTERIS.—Derived from *kalos*, beautiful, and *ptēris*, a Fern. A small genus, separated from *Diplazium*—its small veins, or venules, being regularly pinnate, or branched off from the large vein or midrib like a herring-bone. It is one of Mr. J. Smith's new genera.

C. ESCULENTUM (Eatable).—This ornamental Ceylon Fern has been introduced lately (1845), and is a strong-growing species, the fronds attaining from three to four feet long. They are twice pinnate, and the pinnae, or real leaves, are lance-shaped, with a deeply-cut margin. The frond stems are thorny, placed upon a thick creeping rootstock, which is the eatable part when peeled and stewed. It is increased by division, and requires plenty of pot room, and to be frequently syringed overhead.

C. MALABARICA (Malabar).—Native of various parts

of the East Indies. This is the well-known, amongst Fern cultivators, *Diplazium Seramporensis*. It may be readily distinguished from the preceding species by the fronds being pubescent, or covered with a woolly substance, and by the stems of the fronds being deeply channelled. It is a large free-growing Fern, easily increased by seed coming up spontaneously on the soil of other plants, as well as its own, in a moist, hot stove.

CAMPTERIA BIAURITA (Twice-cured).—A West Indian genus and species, formed by Mr. J. Smith, from *Pteris*, because of its peculiar form of seed-vessels and its solitary veins. The fronds are of a long triangular form, often reaching four feet long. They are pinnate, and the pinnae are without footstalks, clothing the midrib completely. They are deeply cut in a comb-like manner, or, as it is technically termed, pectinate. The stem of the frond is very long, almost extending to half its length. It is a handsome Fern, requiring a rather large stove to show it to advantage. The rhizoma is erect and branched, and by cutting off a branch, and placing it under a handlight, or bell-glass, roots will soon be produced, and a separate plant made.

CASSIBEERA.—A commemorative name in honour of a German botanist, J. H. Cassibeer. A genus of beautiful Ferns, formed by H. J. Smith, out of *Pteris* and *Cheilanthes*. Its principal character is founded upon the seed-cases being placed upon the top of four veins, and have each a marginal edge. Every species is very beautiful, and of a rather dwarf habit, rendering them suitable for small collections.

C. CUNEATA (Wedge-shaped).—A bipinnate Mexican Fern, of a neat habit; may be grown in a greenhouse, but thrives much finer in a moderate stove. The fronds grow ten inches high, and are of a light, pleasing green. It is easily known by its barren fronds being wedge-shaped, and its seed-bearing, or fertile fronds being of a comb-shape, and narrower towards the stems. Easily increased by division.

C. FAKINOSA (Mealy).—Native of Nepaul. This is, perhaps, the handsomest Fern in cultivation; the leaves are beautifully green on the upper surface, and, when turned upwards, may be seen to be of a pure white, or powdery appearance. The fronds in shape are triangular, with black stems. They are bipinnate, or twice divided, about a foot long, adhering to a short erect rhizoma. In the Royal Gardens, at Kew, the cultivator of Ferns is very successful in raising this truly beautiful Fern from seed. I have seen at one time there at least fifty seedlings of it. It does not increase easily by division. As it is a moderate-sized Fern it ought to be in every collection.

C. HASTATA (Halbert-leaved).—A well-known, almost common, Fern, from the Cape of Good Hope, so freely does it propagate by self-sown seed. It is better known as *Pteris hastata*. Fronds bipinnate; pinnae heart-shaped, and gradually terminating in a point, or hastate shape. The edge of the leaves is scalloped out. The seed-vessels are narrow, running along the edge of the leaf. I had the pleasure, when at Pine-Apple Place, of raising a variety of this beautiful Fern, with much broader leaves, and I named it *C. hastata latifolia*. Very lately, I saw the same variety, from seed, in the garden of the Warden of the College at Winchester, raised by Mr. Weaver, who frequently edifies the readers of THE COTTAGE GARDENER by his truly practical papers.

C. INFRAMARGINALIS (Under-margined).—A beautiful Mexican Fern, nearly hardy enough for the greenhouse, only it loves a moist heat, which the greenhouse, when well-managed, never affords. It thrives much better in a close, moist heat in the stove. Easily distinguished from its fellows by its slender, continuous, under-margined seed-cases, or spores. It is a beautiful Fern, but rather delicate. The fronds grow a foot long, and are bipinnate and tripinnate towards the base. The pinnae

are saw-toothed at the edges. The stems are slender, and of a dark brown colour. T. APPLEBY.

(To be continued.)

MUSHROOM-BEDS.

(Continued from page 47.)

As we have in a former article said that the production of Mushrooms in winter depends a great deal on the quality of the materials used, and the care and attention bestowed in preparing them for the purpose, it is only necessary here to observe, that the dung should not, on any account, be over-heated before it is removed to the ground, or shed, in which it undergoes the preparation of "sweetening," or tempering, so as to modify, in a certain degree, that violent heating which stable-dung is subjected to when thrown in a mass together. And in such a season as the present one has been this part of the work must have been conducted under cover, otherwise the heavy, drenching rains we have had must have injured the dung very much. In preparing it for the purpose of a bed, some little difference ought to be made between one intended to bear inside a house on purpose, and one to make up in some sheltered place out-of-doors. The former of these must have the dung in as pure a state as possible, for, as such beds are generally very thin, it is necessary to have it as free from inert or useless matter. Therefore, for such beds, be more careful in removing the litter with which dung is usually mixed, and do not add anything less useful than horse-dung. A few sheep or deer-droppings may be advantageously added, more for the purpose of giving richness to the bed than assisting in the formation of young Mushrooms. It is, nevertheless, advisable to have these in use some time before the beds are made up, say about three weeks; the early part of the time the mass ought to be turned almost daily, but gradually prolonging the time until a brisk but moderate heat succeeds that rank violent one which it presents at first. Now, in preparing the dung, it is equally wrong to allow it to remain so long in hand as to dispel its heating qualities entirely. This error we have more than once witnessed, and the result, as might have been expected, was unsatisfactory. These attentions, as a preparatory measure, are equally necessary as those of an after-kind, if not really more so, for the condition of the dung, at the time of making up, is of more consequence than all the after-management; in fact, the duties attendant on looking to, and occasionally altering, a newly made-up bed are trifling compared to that of making it, so that no after-care can rectify an error made then.

Supposing that a quantity of well-prepared dung has been lying long enough to dispel all its over-heating properties, and presents a mass of steady heating matter, free from all noxious smell, and other impurities, and the shelf, or bed, allotted for it in the Mushroom-house ready to receive it, no time must be lost in making up accordingly. The process is in accordance with the build of the house, &c.; but, in a usual way, such structures are built with some flue or other heating contrivance, so that the necessary atmospheric warmth that is wanted to furnish good and useful Mushrooms occasionally may be supplied.

Such houses are usually divided by a pathway up the centre into two equal parts, which is so arranged as to present a series of beds, one over the other, leaving a space of at least two feet between the top of one bed and the bottom of the one above it; the lowest one being generally on the ground-floor; and the second, and others in succession above it, are like so many shelves, with a depth of about a foot for the dung which the bed is made of. Now, as I have observed, this bed, or

shelf, ought, when filled, to be made of the best possible materials, and these in good condition, that we need not further urge on the necessity of having every care taken in preparing it, as it will be seen, the quantity not being large. In filling up the shelf, or bed, it ought to be made tolerably firm; yet need not be so much rammed as if it were the fixing of a gate post; and it is best to put it in a small quantity at a time, in order to heat it as it is thrown in, and the bed, or shelf, being filled, is then allowed to remain a few days, in order to see which way the heat turns, as it sometimes becomes inconveniently hot; at other times it refuses to heat at all; when the former is the case, taking out a quantity, and so disturbing the bed in many places, will usually effect a reduction in the heat, but this is rarely necessary when due pains have been taken to prepare it as detailed above. It is more likely that it will fail to heat when it has been allowed to evaporate all its fermenting qualities in the process of preparing. When this is found to be the case, make a good-sized hole or two in the bed, and filling it with good, warm, fresh dung, will usually effect a change, and the bed having become gently warm it must then be spawned.

Spawning being a part of the business on which success, in a great measure, depends, it is, perhaps, not out of place to say a few words on this substance. The singular substance called Mushroom-spawn, is usually formed of some compound in which dung is an important part; when it is made artificially, the admixture of a little loam, with two or three kinds of dung, is usually successful; but the manner of making it having been detailed before, it only remains to say that it is often found in old hotbeds, and other places where dung has been allowed to lie some time; or even in dry pasture fields it is sometimes found; and we have picked up some excellent Mushroom-spawn from amongst the dung which covered the rows of potatoes planted in a field; and the same substance has also been picked up in the track of a mill-horse, whose rotary motion confined his travels to a very limited circle, so that it often happens that good spawn is found in sufficient quantities without the trouble of making it; however, it is advisable to have always a sufficient quantity on hand; for beyond the waste it may occasion in spawn that is difficult to obtain, it is impossible to give a bed too much. The plan is this:—

When the bed has assumed that nice gentle heat which indicates steadiness, then let a quantity of spawn be broken up into pieces not smaller than an apple; these insert in the Mushroom-bed, at distances of not more than a foot from each other, but three or four times the quantity may be put in if necessary; holes may be made for it so as to be just buried, and that is all. A covering of dry soil may be put on at the same time, and the bed being then smothered and beat over, it is only necessary to examine it occasionally to see that the heat is not allowed to warm too strong; and if it subsides too much, it is better to throw a little warmth into the house by putting the fire-heating apparatus to work. It is also sometimes advisable, when it is too dry, to water it gently; and if it be dry, and likewise cold, a quantity of hot-water poured into it in places (not all over it) will do good by causing a reaction, and the heat which warm water creates is somewhat improved by the latter holding sheep or deer dung in solution. This, however, is not often required when due care has been taken to make the materials up in the right way at first. Now, as all these conditions are necessary to ensure success, that we must particularly enforce on the young practitioner the propriety of attending to the well-preparing of the dung as the primary object; for to neglect that would be to throw away the only chance we have to secure a crop, for though it may sometimes happen that a good crop will follow a bed made up of hopeless look-

ing matter, yet such success is more due to the other condition at work; and the crop is almost, in spite of the badly made-up bed, rather than in accordance with it. However, as all who have an ardent wish to have the luxury of a good plate of Mushrooms at Christmas must bestir themselves, we only report what we know to be true, that any ordinary amount of labour which such an issue demands is always met cheerfully; so that we may hope, that hereafter indifferent crops of Mushrooms may be as rare as bad crops of other things, and that their culture, being once under control, will continue so, in order that this singular vegetable production may be placed within reach of the million: and that those who have hitherto had to depend on a precarious supply, may now be furnished with the article in any quantity, and quality also proportionate.

Weak waterings with liquid-manure will be of service after the beds have commenced bearing; and if it be necessary to apply fire-heat, and that be of a drying description, the bed ought to be covered over with litter of some kind or other, and that frequently damped, so that the drying influence of the heat applied be not allowed to drive the moisture from that part of the bed which has none to spare; but when there is atmospheric moisture supplied as well as heat, which is easily done by placing shallow vessels of water over the heating apparatus, the beds need not be covered. Observe, that in bringing in hay, and similar litter, that slugs are sometimes introduced, and these prove sad enemies to the Mushrooms. Such, therefore, ought to be well attended to, for the omission of one point sometimes mars the whole design.

J. ROBSON.

CULTIVATION OF WHEAT.

(Continued from page 66.)

WE are now arrived at the third division of our subject, which relates to *Sandy and Gravelly Soils*, on which the four-course, or Norfolk, system is more rigidly adhered to than on any other soils; and generally, any departure therefrom arises from failure and accidental causes, rather than from any idea that a better rotation can be devised whilst the land is kept in a fertile state.

The first thing to be considered is the management of the lea land; and although this subject has been treated in detail, with reference to the cultivation of heavy land, in a former paper, yet the nature of the soil now under consideration justifies some departure from the mode of management therein stated.

It has been considered an excellent practice to plough in a good flag or aftermath of Clover, and no doubt a full quantity of the Clover leaf, when decomposed, furnishes valuable nourishment to the Wheat crop. Yet the system of stocking largely with sheep upon these soils, and the later period to which the ploughing and sowing may be advantageously deferred, has induced the practice of feeding the lea land as bare as possible, thus converting a vegetable manure into a highly-fertilizing animal manure, and at the same time yielding its portions to the profits of stock.

These dry soils do not require to be early ploughed, for, unlike heavy land, they are benefited by the heavy autumnal rains, peculiar to our climate, previous to being ploughed. The presser should always be used; and when the season favours the operation, it is a good

plan to use Crosskill's clod-crusher, or the ring-roller, across the ridges, previous to working with harrows, whilst preparing the land for drilling. The time named for ploughing heavy land being the early part of September, and the best time for ploughing these light soils being the latter part of October, or the first part of November, establishes a great distinction between the management of the different soils, and enables the latter to afford six or eight week's sheep-keep more than the former. In preparing manure for these light soils, a compost of clay-loam may be always advantageously mixed with, and laid out with, the yard or town manure. This addition of mould will enable the land to carry a heavier crop of Wheat, both in straw and grain. It is, also, best to drill the Wheat at from five to seven inches apart, in order that hoeing may be done if required, which is often the case, these soils being much infested with the Poppy, Charlock, and other weeds.

The failure of the Clover seeds often necessitates a change in the rotation, and the substitution of a crop of Peas or Winter Beans, in which case it is the best custom to sow Turnips, Rape, or Mustard, after the Pulse crop is removed. This quick succession of feeding crops is highly beneficial for Wheat upon this soil, by reason of the treading effected by sheep whilst consuming the produce; in these cases, the sowing may be delayed till the early part of December, for when sown thus late the Wheat will be freer from weeds in the following spring. The quantity of seed cannot be diminished below eight pecks per acre, owing to the late period of sowing; indeed, the sowings in December should be made at ten pecks per acre.

I would here observe, that these soils, when sown to Wheat after Turnips, or green crops, should always be ploughed as shallow as possible, or otherwise let the land be broken with the mireshare, or scarifier, if the weather is favourable; this will give a firm bottom so desirable for the Wheat crop; whilst disturbing the soil to any considerable depth would destroy the advantage always derived from treading by sheep, and would endanger the plant of Wheat, by rendering it liable to be eaten by the wireworm.

The most suitable sorts of Wheat for this light land are those which grow thick, tiller well, and do not produce too long straw, and it may be noted, that there is no land so well calculated to produce good crops of *mixed* varieties; some of the best mixtures are the following, in the proportion of two parts Red Wheat to one part White Wheat. Old fashioned White-strawed Red Wheat, mixed with Scotch White. Nursery Red Wheat, mixed with Hoptoun White. In some instances, where the climate is favourable, varieties of the best sorts of White Wheat may be successfully grown without mixture; these varieties, however, will be chosen with the greatest advantage by persons experienced in the management of this soil, according to its situation.

The treatment of *Dry Chalk Soils* forms the last division of my subject; and here, again, I find the best management differs materially from that related in connection with other soils; for although good substantial loams

resting upon chalk, where the aspect and climate is good, may be most advantageously managed upon the system recommended in my former paper upon the treatment of loamy land, in almost every respect; yet, upon high and dry chalky land, which is often deficient in climatic advantages, and upon the culture of which I now propose to write, the best mode of treatment is somewhat peculiar. Formerly, the practice of these districts was not to sow Wheat oftener than once in six or seven years, and even then producing but a very moderate crop; but since the introduction of artificial manures, by which these high and outlying lands have been made to produce roots equal to some of the best soils, they have been brought into a fertile state, which has induced a mode of farming based upon the four-lain system, similar to the rotation named as best for the management of sand and gravel land, the chief difference to be observed relating to the details of culture.

It must be borne in mind, that in many parts, where the land is highly-farmed, that these soils being made to produce a heavy crop of straw, yield a large quantity of grain, in favourable seasons, with more certainty than many soils naturally of a fertile character; and it is a very encouraging fact to farmers of this class of soils, that their return of profit from the use of oil-cake or corn-feeding, combined with artificial manuring, will prove twenty-five per cent. greater than it will when expended upon the best description of land. In the treatment of lea-ground intended for Wheat, it is usual, upon this soil, to plough early, in order that the land may have time to settle and become firm, and thus prevent the Wheat-plant being thrown out and becoming root-false, which it is very liable to in this land. The more effectually to prevent this, let the ridge-ploughing be done not later than the month of September; and at the time of ploughing let it be pressed, and afterwards rolled crossways, and harrowed sufficiently to break the furrow down fine; then let it lay and become stale. When it is intended to be seeded, let this be done by the drill during the month of October, taking care to obtain sufficient mould to bury the seed, by using the nineshare, or scarifier, and the harrows, just before the operation of drilling. The seed should be drilled as deep as the firm state of the land will admit, and as soon as drilled, let the sheep-flock be driven upon it, passing twice over the land, in regular courses, throughout the field; this treading is peculiarly beneficial to the growth of Wheat upon this soil.

The mode of manuring is generally by the folding of sheep; and except in land situated nearest to the homestead, where it is desirable to lay the yard manure, any deficiency of the fold may be made up by the application of bones or dried flesh manure, or Guano, which should be sown at the time of drilling, as the spring-sowing upon the surface does not answer so well upon chalky soils.

The management necessary to sustain large flocks of sheep upon the land considerably affects the mode of preparation for Wheat. It often happens that a portion of the land which has been seeded to Trefoil is rather

fed by sheep or cut for hay; in either case it is ploughed up and sown to Turnips, Rape, or Mustard, according to the time of year, or state of the land; the broad Clovers being cut for Hay. In case of failure of the seeds, Peas are taken, followed by Mustard, or Rape, these being all fallow crops, and fed off by sheep as they arrive at maturity; the period of sowing is thereby delayed, it being usual to sow the lea ground first, and give the stock the advantage of a month or six weeks more feeding. This often protracts the period of sowing to the middle or latter end of November, but it should not be later upon such land, and all the late sowing should have three bushels of seed per acre drilled at five inches apart. In all cases, of either early or late sowing, unless the weather is unusually wet, the land should be managed as before stated, without ploughing, and be trodden over by the flock as soon as drilled. The hardy varieties of Brown Wheat are best suited to this soil, and particularly those kinds which give plenty of straw, such as the Red Lammas, Spalding, and the Golden Drop, with many other sorts, the selection of which must, in a great measure, be left to the judgment and experience of the cultivators of this soil.

JOSEPH BLUNDELL.

LOOK AT THE KERNEL.

By the Authoress of "My Flowers," &c.

It is very melancholy to mark the quiet, downward course of men who have for years done well in the world; to see them gradually declining into poverty and nothingness, after being persons of consequence in their different spheres. It is very melancholy, very affecting, and very instructive, too, if we will take the trouble to *look into* things, and see what kind of men they were inwardly, as well as outwardly; for it is not the shell, but the kernel, that produces the tree.

In my last paper, I gave the sketch of a cottage gardener's decline and fall; I am now going to give that of a gardener rather high in his profession; a man well known, by name, to many of my readers; the gardener to a gentleman with whom he resided many years. George Webb, by which name I shall call him, possessed the confidence of his employer, who had gardens, hothouse, pinery, and all the usual appurtenances of horticulture and floriculture. Webb was the "great pan of the dairy," to use a homely phrase, and everything about the place was directed by him. He had to provide the family with all the garden produce they required, and the rest was his own. He had, of course, his cottage, and a rising family, and he might have done extremely well, fairly and honestly, in the sight both of God and man. Webb had the ear of his master, and very much of his hand too, for his name and his influence were more spoken of and felt than that of any one else. If Webb chose that a man should be turned off, he went; if he chose another, he came; and so on. Webb's word was a kind of law, and he ruled despotically. No man ever spoke well of him. It is a fearful thing to put power into any one's hand to whom it does not lawfully belong; it is almost certain to be abused. You cannot tell what a man is until he is tried, and nothing tries so searchingly as *power*. Webb had great opportunities of deceiving, injuring, and defrauding his master, and he had the *reputation* of doing all three. He was very clever in his business, and nothing was spared to produce fruit, &c., of the best quality; he did just as he liked, and of course his master paid the bills.

Many years passed in this way. At length his master determined to sell his property, and when this was done, Webb was obliged to remove to a home of his own. No one coming to the place would engage him, with all his ways of going on, which soon become known when the day of power closes; and no one in the neighbourhood would

have had anything to do with him, because he had so long been his master's master. Webb, who was a widower, took a little cottage in the next village, to which belonged a large piece of garden ground, and there he settled himself and three or four children. The cottage soon began to look pretty under his skillful hands. All sorts of shrubs and flowers flourished and bloomed around it; and when he was busy among them, on a summer's evening, he seemed to be really in a very snug, comfortable position.

The first domestic affliction that came upon him was the conduct of one of his daughters. She was engaged to be the wife of a young man of some property, but no principles. She fell into sin, and her partner in guilt deserted her. Grief—and, it is to be hoped, repentance—tore her breast, and she died of a broken heart. This was a keen and heavy blow, without any softening circumstance, to the poor father. His own health had long been declining, and he had no partner to share and soothe his griefs. Possibly, man's sterner materials prevent the degree of suffering that woman feels under affliction; but there is something very sad in seeing a man standing alone in sorrow; there is a coldness and desolation in man's grief, when he has not a softer half attached to him, that excites our pity exceedingly; and poor Webb, in his loneliness, with broken health and infirm limbs, must have been the picture of woe, as he watched the death-bed of his child, and returned from laying her in the grave.

Two or three years have passed since then; and Webb still dwelt in the same house. Sometimes laid up with gout and other complaints, and sometimes going about with a large bunch of seals to his watch-chain, and a flower in his button-hole, as he used to do in gayer and younger days.

Some months ago there was a rumour of the sale of his furniture and effects. The day was fixed, and, if some friend did not come forward to help him with a sum of money, all was to go. The sale did not take place, however, and it was supposed that help had been afforded. Things have gone on quietly for a time. Webb is a man who keeps his affairs to himself; but, when difficulties begin, they are not easily ended. His son, who had a good situation in an extensive garden, returned some months ago, no one knew why, and has been living at home ever since. The last intelligence of poor Webb's movements was, that he is going away from the village; some of his plants and effects have been sold, and he is, himself, about to depart too. The most distressing circumstance is, that both he and his family have long given up the public worship of God. Formerly they used to frequent the sanctuary, but now he is rarely seen there; his son and daughter never.

This is a pitiful end to a once flourishing gardener! But it is the end of all who do not walk with God. It is seldom that men who act dishonestly and unjustly prosper in their latter days; there is a canker at their root that causes their verdure to fail, perhaps without any apparent cause. Like their own plants and flowers, they droop and dwindle; but they do not treat themselves as they treat them—they do not lay bare their own heart as they lay bare the roots of the diseased plant, and see how matters stand there. If they did, they would find the worm that destroys their prosperity; they would find the sin that brings down God's wrath upon them, or, His gracious but "severe mercy;" they would find that His name despised, and His law abused, and His Word neglected, was the cause of all their misfortunes, and not this or that mischance and want of luck. Oh! if we would but watch our own ways closely, we should see such wickedness in our dealings with our fellow-men as would astonish us! Trust abused; opportunities of gain at another's expense; little dishonesties, as men call them; advantages caught at unlawfully; plans recommended for our own selfish purposes: Oh! such myriads of wicked, unholy, vile practices, large and small, that we may well wonder at the patience and long suffering of the Lord, and not at our own disasters. "Is there not a cause?"

There may be many men going on, with a flowing sail, like Webb in days gone by. Let them dig about their own roots, and search them closely, lest the Lord should cut them down. Reader! what soil are you growing in? Much depends upon that. Are you planted in the stony places of the world, or in the green pastures of the Gospel? Depend upon it, if you have not chosen the Lord for your portion, your root

will wither, and you will dwindle and die. It is He alone that can keep your hands from touching "the unclean thing," and your hearts from going after your covetousness. What is a youth of prosperous wickedness, and an old age of poverty or sadness? Is it worth the peril of your soul? Let us approve ourselves to God, then we shall have peace, even if we have not plenty.

NORWICH AND HONITON POULTRY SHOWS.

THE first exhibition of a newly-established Poultry Society is announced to be held at Norwich, on Tuesday, the 29th of December next, and the two following days. The committee, it would seem, have had some misgivings as to the prudence of exceeding the limits of two days for their show; since, to quiet the minds of intending exhibitors, the following rule has been introduced into the usual form of such documents:—"The Committee, having witnessed the injurious consequences of insufficient cleanliness in previous Exhibitions, will see that particular precautions are taken to ensure the comfort and health of the exhibited birds. Ventilation will be especially attended to, and roosts provided for certain classes of birds." All this is highly praiseworthy; but we should have been better satisfied to have had these assurances (which every exhibitor, by the way, has a clear right to demand from the managers of such societies, even supposing the show lasts but a single day) guaranteed generally for the two days, and not find ourselves referring to them as a reason to justify the detention of the poultry beyond that time.

Two days is amply sufficient for all such local exhibitions; and any excess beyond this period will eventually damage their success, from the unwillingness of the owners of valuable birds to subject them to the hazards of protracted confinement. They (the fowls) have quite enough to go through already; and few of us who are conversant with their condition after their appearance in public will be willing to add a single hour to their confinement, beyond what must be regarded as strictly necessary for the purposes of the different societies.

We have quoted one regulation from the prize list of the Eastern Counties Association, and find ourselves, unfortunately, on one point, at variance with its managers; but these gentlemen have framed another rule which well deserves admission into the prospectus of every Poultry Society:—this states, that "*Exhibitors are earnestly requested not to forward specimens in an unhealthy state, as they will be rejected.*" Risks, indeed, are already sufficiently numerous for us to dread the evils to which our favourites must be exposed, without adding that of infection. It is proposed, we observe, on this occasion, to renew the attempt at selling the priced pens by auction at the close of the second day. At the Metropolitan this scheme proved a failure. It remains, therefore, to be seen whether or no it can be better managed on this occasion. The deduction of 10 per cent. on all sales is too high; the usual 5 per cent. was a much wiser charge.

We notice, also, as a novel feature in the prize-list, a "*Committee prize*" for "the best Shanghae cock," and "the best Shanghae hen;" to be shown separately. This is, assuredly, a step in the right direction; and before another year will probably have many imitators; for a distinct class of male and female birds, shown separately, will be a boon to poultry-keepers generally. An error, however, has been made in giving but one common class to the Coloured and White Dorkings, birds which should certainly stand apart. Turkeys, as might have been anticipated, have tempting premiums for both the young and the old birds; but why withhold similar encouragement from the Geese?

The "*Cottager*" is invited to compete for "*the best collection of useful Poultry, not less than six in number.*" But this is hardly explicit enough; for Turkeys, Geese, Ducks, Fowls, Pigeons, and Guinea Fowls, might, by this rule, each contribute one representative; and if the best of their several classes, then present, this miscellaneous medley might claim the prize; yet this could hardly have been intended.

To judge from the list of patrons, this initiatory step, on

the part of the Norfolk Poultry-keepers, must have received great encouragement; and we shall learn, with pleasure, that the most sanguine anticipations of its promoters have been fully realized. But we find another prize-sheet on our table, detailing the premiums offered at the second meeting of the "*Honiton and East Devon Association for the Improvement of Domestic Poultry*," to be held at Honiton, on Wednesday, the 28th day of December next.

We are glad to notice the example of the Winchester and Cornwall Societies, in allowing the ticket, "*not to be sold*," to be affixed to pens which their owners have no desire to part with, has been followed in this instance; regarding it, as we do, as a manifest improvement on the former custom. But why Black Shanghaes should compete with the Brown and Partridge birds, we are at a loss to understand. If their admission is insisted on, a separate class should be granted; and, so far as their origin is concerned, they would certainly be more at home with the White birds of that class than where they will now find themselves at the Honiton show. Turkeys and Geese should have had more encouragement, if only as the Farmer's stock, whose Ducks, moreover, if he fail to possess the Aylesbury or Rouen breeds, are altogether exclusive. This last is a serious fault; for, although we have reason to consider the two first-named varieties as the best for general purposes, still, we cannot forget that there are many sub-varieties of the common Duck of great merit; and the beautiful and useful Black East Indian, or Buenos Ayrean Duck, should have admission to every Poultry Exhibition. In Pigeons, too, we notice a most arbitrary selection; Trumpeters, Pouters, Barbets, and Turbits, being most summarily excluded; but these would surely have as quite as good a claim for admission as the Nuns, Archangels, Jacobines, and Fantails, that have found favour with the Honiton Society.

Let it not be thought, that, since we cannot bestow unqualified approbation, such remarks on what we must consider errors should not appear. Our duty, in that case, would be ill-performed, and our task but half-fulfilled. In this, as in every other similar instance, we object, on principle, to an arbitrary selection of certain varieties of birds for the honours of the prize-list. Whatever money can be applied for premiums should be fairly distributed between all the recognized classes. We are not to pick here and there for what we may like or think best, but let all compete on a fair field, and without favour.

Some liberal prizes for "*dead Poultry*" are added to the Honiton list; and we believe that such an introduction will be found advantageous in very many localities.

THE GUERNSEY LILY.

(*Nerine Sarniensis*.)

THE history of the introduction of the above plant to our greenhouses, conservatories, and parterres, and its mode of cultivation in the island of Guernsey, are of such interest as to induce me to lay before your readers what little I know respecting this much-cherished favorite.

This interesting plant was found growing about the middle of the seventeenth century on the sand banks in the Vale parish, Guernsey, supposed to have been washed there with the debris of a Japanese vessel wrecked on the coast. Some cottagers discovered it in bloom, and took it home to their own gardens and planted it, thereby originating a source of employment, and remuneration for their industry and that of their successors; the grower now looking as much forward for a portion of his revenue from his crop of Guernsey Lilies as from any other crop he may have growing on his land. I cannot doubt the correctness of this time being the period of its introduction, as in walking through the picture gallery at Hampton Court Palace, in 1851, I discovered, in one of the rooms, a drawing of it with the figures 16 9 on it (I could not distinguish the third figure in the row), and do not doubt the drawing was made soon after its introduction. I think this sufficient evidence as to the period, as I find it to correspond with the date specified in London's "*Hortus Britannicus*," 1659.

The persons cultivating the Guernsey Lily with most success invariably select a low, sheltered, spot, where the ground is of a light, sandy texture, mixed with loam, under

the protection of trees—(part of an apple orchard, for instance, sheltered by an elm hedge, of a description for which the island is famous)—wherein they are planted in rows, according to the width of the strip allotted for the purpose, as close together as they can be, allowing just sufficient room for spreading the roots; about two inches between the roots, and ten to twelve inches between the rows, burying the bulbs but half-way up, leaving the necks entirely exposed. The usual season for planting them out is the middle or latter end of September, as soon as the roots begin to grow; this being an indication that they will not bloom that season. After planting, they are left without any sort of protection but that afforded by the locality; and they make their growth during the winter months, which, if favourable, and not very frosty, so as to allow the full development of the leaves, ensures an abundant bloom during the ensuing August and September. The beds are generally left for years without transplanting, and the visitor is often astonished, in going into these Lily grounds, to find the roots growing in clusters all along the rows, thrusting one another, as it were, out of the ground, from the rapid increase of the roots. As the blooming season comes on, the elderly ladies, for it seems their prerogative, as far as I have had an opportunity of observing, go along the beds or rows, marking out with little sticks the roots which show any indication of blooming buds, so as to be able the more readily to take them up on the market mornings, or when application is made for them by the dealers; and it is astonishing the power of vision our worthy friends display in their peculiar avocation, discriminating the flowering from the non-flowering roots with an aptness which has made me and many younger owners of a pair of good eyes blush at our imperfection in their peculiar pursuit.

They are sold at prices varying from 2s. to 4s. per dozen; the dealers collecting them and sending them in quantities to the different nursery seedsmen and private customers throughout the United Kingdom, by whom they are distributed to the boudoirs and conservatories.

The theory that the same root never blooms twice is incorrect; as I have, at this present moment, one before me which flowered last season, and have often had them to bloom a second time.

I attribute the fickleness and uncertainty of their blooming more to the unfavourableness of the mode of culture than to any other cause; and I have also noticed, when the winters have been long and severe, there has not been such an abundant bloom as in milder seasons.

Belladonna Lilies (*Anaryllis Belladonna*) are cultivated in a similar manner; with the exceptions of planting them deeper, and they require a richer soil, and more space to grow in, the roots being much larger and grosser feeders than those of the more admired favourite, whose pretty rosy-crimson umbel of flowers is adored by all who have the gratification of seeing it well bloomed.—CHAS. BD. SAUNDERS, *Casaeum Nursery, Jersey*.

COTTAGE BREWING.

"There were twelve kings lived in the west,
Twelve kings both great and high;
And they have sworn a dreadful oath,
John Barleycorn shall die.
They dosed him with nux vomica,
Heaped strychnine on his head,
And then they rubbed their hands and cried,
'John Barleycorn is dead!'"

A BROTHER Patrick, they say, was once thought to be dead also; but he, lively soul, upon an interrogatory question to that effect, answered, "No, he was not dead, but spacheless!" Alas! honest John, thou art speechless, even from the womb of thy mother earth, still thou livest on; aye, and will continue to live as long as British industry endures. Would that you could speak in defence of thy much abused and dishonoured self—a most affecting case you would have to plead; sufficient, no doubt, to win over and shame the defamers of thy generous heart, those wallowers in excess, who bring mistrust upon thy good name by their own weak and immoderate indulgences; with others, who, agreeably to the tune of the "twelve," heap strychnine and the like abominations upon thy guiltless head, thus sacrificing a

generous spirit to their own rapacious maws and all grasping cupidity. Pity 'tis, but we know it is true, indignities must be suffered; lucky, indeed, when at such times a friend and adviser can be found to relieve and support us under them. John Barleycorn!—deny it who can—you are one of the surest and safest props for your country; a long vista of years must be seen through, ere you cease to provide for her one of her principal sources of revenue. I find no fault with persons who refuse to drink your mild Metheglin; but I deary those who misuse and abuse you. Justly treated and considered, there remains not a home or cottage in the land where you would not become thoroughly appreciated, in conjunction with a home-baked loaf and a Cheshire cheese! It is in this light, my friend, I take you by the hand and encourage you: also that other, in which the young Persian Prince, Cyrus, answered his grandfather, Astyages, King of Media, who, when the latter thought to induce him to become intoxicated, refused, giving as a reason, how, at an orgie not long before, he had been pained at beholding him, a king, humiliating himself in the eyes of his subjects, through being too drunk to stand upon his legs. "Why," replied Astyages, astonished, "have you never seen the same thing happen to your father?" "No, never," says Cyrus. "What, then! how is it with him when he drinks?" "Why, when he has drank, his thirst is quenched, and that is all." England requires steady sons, with sinews and strength and common sense; these qualities can never be gained in our modern pot-houses; and the idea of a man wasting his substance and impoverishing his family at those places, merely to favour and enrich such worthies as the "twelve kings," is a matter most difficult for me to understand; yet, still it is so.

I am not an old man, and I hope to live to see the day when landlords will consider a copper as necessary an appendage for their cottages as a chimney, and to find individuals, who wish well for their country, in possession of brewing utensils, to let out for moderate hire to their poorer brethren (to insure a clean and speedy return for them fines should be imposed), thus enabling them to brew their own beer. I fear no evil in broaching this idea. Place a man in a position to understand himself; assist him to those means which create a responsibility and interest for him around his own domestic hearth, and the natural results arising therefrom will, if anything, lead him to despise the drunkard's course; he becomes aware that all excess is sin, and that the moderate use of the bounties of the Giver of all good is conducive, not only for his present, but of the first importance towards his future, happiness.

"Every man his own brewer," would be a maxim premature in me to insist on; or that I should with prejudice claim a precedence for the plan of my adoption, would be equally egotistic; the adage about the roasting of eggs would rise up in judgment against me; nevertheless, for those who should feel inclined to try the system I am about to point out (and I do think the process of brewing is among one of the most useful occupations in domestic economy with which a man can make himself acquainted), I assure them a glass of nut-brown ale as a result, such as would serve to cheer and not inebriate.

This paper is intended as a means to assist and point out the intention of a small brewing, although its rule would be found equally applicable in a multiplied sense for the purpose; the latter and larger feature would necessarily include an assistant, therefore, the moment of preparation does not call, perhaps, for so much consideration; but where, as I am about to suppose, a man is his own factotum, it is well to take twenty-four hours by the forelock: a preparatory hard days' work running into the same night that one brews, is not, so far as my experience warrants me to speak, over-avoidable. But, if you are not your own workman, and, unless you are quite confident in your brewer, lend a hand for the mashings, give an eye to the boilings, and set the beer to work yourself; these three points attended to, the rest may be confided to the tender mercies of an uninterested person. You will, probably, from the latter class, get plenty of advice, as to the inutilty of mashing and boiling, for so long periods as I recommend; but be fore-armed—"a slow brewer, and a quick baker," is a proverb. Insist upon it, that clear, well-flavoured beer, to stand the proof of keeping, cannot be had, unless it be well-boiled;

nor can the virtue be extracted from the malt unless it be well mashed.

It is immaterial whether we brew by night or by day, though, as in my case, where the brewhouse served as a kitchen of all work, I preferred to begin about seven o'clock in the evening, in order that by the time the real business began, the women might be snugly ensconced upon their pillows; and, before they were about in the morning, the beer should be out of the way, and the place set fair—no small consideration as regards a man's quietude and peace! If the women wish the men somewhere on a washing day, I hope they will forgive my saying that they (the women) are happier in their beds, out of the steam and other "*messing*" attendant upon a brewing.

A supposed quantity of beer necessary to be brewed at one time, with the majority for whom I write, would seldom, I think, require to exceed fifty gallons. Agreeably to this idea the following list of utensils, with their proportions, will be found proper to carry out the principle *comfortably*. I consider no brewing-plant or fixtures of any description, with the exception of the copper; and whether this be composed of cast iron, or otherwise, I will suppose it set within a foot or so from off the level of the floor. It should hold sixty gallons:—

Four fifty-gallon casks; one six-gallon ditto, and two brass taps. A mash-tub, measuring eighty gallons, with screw faucet, and a strainer. Two oval coolers, eleven inches in depth; one holding thirty, and the other forty gallons. Four brewing-tubs of thirty, twenty, fifteen, and ten gallons respectively. Two pails, four-and-a-half gallons each; one tun pail four-and-a-half gallons; and a lading bucket measuring one gallon. A brewing ladder and sieve; the latter of two feet diameter, with its bottom composed of horsehair, or fine cane-work. Two tin working tubes; whisk, scrubbing-brush, mop, and birch besom. A three-quart tin, with a cover; a pint measure, a brewing thermometer, and a flat-backed step triangle for tilting purposes. Also a stout basket, containing a cooper's mallet, and hoop-driver; gimlet, bungs of sizes, corks ditto, vent-pegs, a piece of chalk, some stout rushes, a piece of hop bagging, a chisel, a knife, and a pair of shoemakers' pinchers. It would also be well to keep a duplicate of iron hoops for your casks by you.

If the casks and brewing utensils are out of order, and you are unacquainted with their management, it would be advisable to call in the aid of the cooper, when, by noting his operations, you would, with greater facility, be enabled to adopt the same course personally another time; and, for a cottage brewer, like myself, whom we will charitably suppose to have no more spare cash than he knows what to do with, to be competent to take the ends out of his casks, and replace them, &c., without being under the necessity each time he brews for requiring the assistance of a cooper, is decidedly an object well worthy a consideration.

By this means I became initiated, and I will work my method out upon paper for the benefit of those of my readers who may feel an interest in the matter. Having the basket, with its contents, conveniently near, take the piece of chalk, and form a distinguishable mark down the side of the cask, as a guide for their positions when replacing the hoops; then cut a notch on the end of a stave, and another to correspond opposite on the head; these will point out the place it occupied before removed. Pierce the gimlet slightly into the centre of the head, it will serve as a handle to lift out and replace it by; then strike off, with the mallet and driver, a sufficient number of hoops to relieve the head, return the top hoop to reclose the staves, and take the grounds from the bottom of the cask to the hog-tub. If the inside of the barrel appears mouldy, scrub this off first with cold water; hot water is liable to drive in the taint that accompanies the mould, which would ultimately impart an unpleasant flavour to the beer. After this scrubbing with cold, follow up the operation with hot, and finish by scalding the cask; viz., enter two or three pailsful of hot-water, and whirl it around well with a birch besom; again knock off the hoop or two which were temporarily returned to close the staves, place the head at the bottom of the barrel, and proceed to make "all taut," by returning the largest hoop, then the next, and so on, the chalked mark serving as a guide for their readjustment. Ere the hoops are driven

home, lift the lid, suspended by the ginnet, and slip it into its groove, with the notches, previously cut, exactly opposite to each other; in so doing, observe if its edge is jagged or damaged; if so, insinuate, opposite those places, some pieces of the thick pithy rush, it will close up the vacancies, and prevent the admission of air or leakage. Now drive the hoops home to their places, and scrub the outside of the cask; then cork it up and pour in at the bung hole a few gallons of hot water; bung it tight; fasten the vent-peg; roll the barrel backwards and forwards briskly, at arm's length; and, should there remain any faulty parts, sufficient to cause leakage, steam will violently issue from thence, cautioning, either to drive the hoops tighter, or otherwise to add more rush at the junction of the head and side.

This scrubbing process holds good for every wooden utensil. Under the supposition that they are all scrupulously clean, and, ere we begin to arrange them properly for brewing, we will take a glance at the copper, which ought, if answering to its name, to be scoured bright with some wood-ash, or sand, and a wet whisp of straw; *verdeggris* (poison) is apt to become engendered on copper, and thus follows a necessity for great care in this matter.

MALT AND HOPS.—The surest way to procure these of good quality, is to order them from a respectable maltster. I prefer a pale-dried malt. For Ale, my practice has been to employ four bushels of malt to make fifty gallons; the proportion of hops for each bushel, one pound, if the beer is required for keeping over a-year; otherwise, three-quarters of a-pound per bushel. For Table-beer, three bushels of malt to the fifty gallons, and three pounds of hops. I brew purposely for small-beer about every three months; this beverage is so much more wholesome when drank quite fresh; and, in another sense, by using them often, it acts as a conservator for the utensils, with other reasons which I will explain in their turn. A chief consideration, also, is the barm, or yeast: to procure it fresh and good, find out if the squire, or some neighbouring farmer, have lately been brewing, it is so much the more likely to come genuine from these places than from a public-house. The proportion I use is one quart of ale, or three pints of small-beer, barm, for working fifty gallons. As a standing rule—never light a fire under the copper till the barm is secured.

UPWARDS AND ONWARDS.

(To be continued.)

PEACH-CULTURE BY AMATEURS.

We have often thought it strange that the culture of the Peach has not become more popular in the gardens of the amateur, being, as it is, one of the most delicious of our stone-fruits, and one of the easiest culture; for such we must term them, though some, perhaps, may differ from us in this respect. However, we have never found any more difficulty in obtaining a good crop of Peaches and Nectarines than a crop of any other wall-fruit, and particularly Plums; for these we consider much more uncertain than Peaches, even in the best of seasons, and under the best of management; yet, notwithstanding their uncertainty and inferiority to the Peach (excepting the Greengage and Golden-drop), they are often seen occupying the side or end of a house, or some other situation which the Peach would delight in. Old Pear and Cherry-trees, that do not produce sixpennyworth of fruit in as many years, may often be seen in such favoured places. Why not grub them up, and make thorough good preparations, and plant as many Peach and Nectarine-trees as the space will admit? They would make double the amount of the generality of the Plums, if taken to market, even if the crops were equally good. We have seen tolerable good Peaches grown against a common inch-thick deal fence, without any assistance whatever to the border; though we will not recommend this careless manner of planting; but we will venture to say, that, as regards the deal fence, excellent Peaches may be grown against such, providing the border be well prepared for the trees. As it is, here lies the main point. It is not the wall that will produce fine Peaches, nor even our elegant glass-houses; for in such are often seen trees in as defective

a state as in the open air, which is, perhaps, more owing to the state of the root than any other cause.

Now, to such as are anxious to grow this fruit, and have not the advantage of a south wall, or means to erect one for the purpose, we will advise them to set up a wooden wall or fence of the above description, in a situation, if possible, that is well backed up with trees or shrubs, on the north and east sides, but at a considerable distance from the fence. The height of the fence may be from eight to ten feet, but the bottom of the fence should be set eighteen inches above the level of the ground, in order to admit of the border being raised to that height, or near about. We would then mark out the border twelve feet, and throw out the soil one foot deep, and give the bottom a good descent from the fence, that the water may readily pass away. We would next cut a drain, one foot deep, in the bottom of the border, twelve feet from the frame, and parallel to it. This done, we would set up a row of coarse flags against the south side of the frame, to prevent the roots running to the north side, and also to prevent the soil coming in contact with the fence. We would next place a layer, six inches thick, of broken bricks, or stones, all over the surface of the excavation or border, and cover them with old flags or slates of any kind, to prevent the soil from falling in among them; and in placing these flags, begin at the lower side of the border, and lay them in a similar form to the tiles upon the roof of a house, as the roots are by this means prevented from getting down among the drainage. The soil should be next got in, which should be the top spit from an old pasture or road-side, where the soil is of a good, strong, loamy nature, neither very heavy nor very light; but particularly avoid a binding soil. It should be used in a fresh state, with a green herbage upon it, and each turf cut once or twice through with the spade; and if the excavated soil from the border is good, it may be thrown back, and mixed with the fresh turf; but if not, it should be taken away. The border should be raised to the height of the upright stone flags, or a few inches above them; for, as the turf decays, the border will sink a few inches.

The surface of the border should be well sloped from the fence to the front, in order to carry off any superfluous water, and to get the direct influence of the sun. In this state the trees may be at once planted, though some prefer November for the purpose; but we have planted in October, November, January, and February, with the same success.

The sorts we would recommend, if four trees be planted, are, *Grosse Mignonne*, *Noblesse*, and two of *Bellegarde*; and if a Nectarine be introduced, choose the *Elruge*.

In planting, spread out the roots, and scatter a little fine soil among them before finally covering them in; and do not tread the soil at all, nor plant them deeper than ten inches. Keep the collar of the trees well up, and water, after planting, to settle the soil among the roots; and in this way let them remain till the buds begin to swell; when, if they be young trees from the nursery, they will require heading back to such buds as are best situated for issuing shoots to form handsome trees, and which shoots must be properly trained as they proceed in growth; rubbing off all foreright shoots and other ill-placed ones, at intervals, as the trees progress onwards; and regard must be paid to supply them with water in dry weather, or, what will in a great measure obviate this, is a covering of shortish dung over the roots.

This is all the attention the trees will require the first season, excepting a good washing, now and then, with the syringe, in dry weather, to freshen them, and keep them free from insects.—J. T.

DORSETSHIRE POULTRY EXHIBITION.

ONE of the most rising of Poultry Exhibitions ought to be that of the Dorsetshire Association for the Improvement of Domestic Poultry. Its second annual show took place on the 19th and 20th of October. There were 457 pens of poultry gathered together; the specimens, for the most part, were good; and the attendance was numerous. Every praise is due to the Association's indefatigable Secretary, G. J. Andrews, Esq., and we are glad again to be

able to hold up another example of what may be effected by energy and good management—"All the birds (457 pens be it remembered) were packed and dismissed from the place of Exhibition to their various destinations before ten o'clock on the evening of the last day."

There is one other example which this Exhibition affords, which we strongly urge the gentry of other counties to follow. It is to give prizes—special prizes—as was done here by the Earls of Digby and Ilchester, Lord Rivers, and others.

A PIECE OF PLATE value £5, given by the EARL OF DIGBY, the Lord Lieutenant of Dorset. To the Owner, being a resident in the county of Dorset, of the best collection of Domestic Poultry, of not less than five varieties of at least three specimens each.

12. James Crane, jun., Tolpuddle. Cochins, cock and two hens, Spanish ditto, Game ditto, Golden Poland ditto, Golden-laced Bantams, ditto, Buenos Ayres Ducks.

A PIECE OF PLATE value £3, given by the EARL OF ILCHESTER, the Patron of the Society. To the Owner, being a resident in the county of Dorset, of the best Cochins-China Cock and three Pullets of 1853, and the best Dorking Cock and three Pullets of 1853. N.B.—One at least of these lots must have been bred by the Exhibitor.

47 and 48. Richard Genge, Waterson. Cochins-China cock and three pullets. Dorking cock and three pullets.

A PIECE OF PLATE value £3, given by LORD RIVERS. To the Owner of the best Cochins-China Cock and three Hens above one year old.

55. Thomas Cockeram, Cerne Abbas. Age, above one year.

A PIECE OF PLATE value £2, given by LORD RIVERS. To the Owner of the best Cochins-China Cock and three Pullets of 1853.

61. Joseph Goodenough, Godmanstone. Age, six months.

A PIECE OF PLATE value £2, given by R. B. SHERIDAN, Esq., M.P. To the Owner of the best Spanish Cock and three Pullets of 1853.

73. James Longman, jun., Dorchester. Age, four months and two weeks.

A PIECE OF PLATE value £3, given by GERARD STURT, Esq., M.P. To the Owner of the best Dorking Cock and three Hens above one year old.

75. William Lewis Henning, Froome House. Age, two years.

A PIECE OF PLATE value £2, given by GERARD STURT, Esq., M.P. To the Owner of the best Dorking Cock and three Pullets of 1853.

80. William Pope, Symondsburry. Cock and one pullet, seven months, two pullets twenty-one weeks.

(Class generally commended, and the judges, seeing the great merit of this class, recommend that Mr. Sheridan's plate of £3 for the best Spanish Cock and three Hens, for which there was no competition, should be given to No. 80, and that the plate of £2 should be given to No. 85.

Class 1.—SPANISH. Birds exceeding one-year-old. Cock and two Hens.

86. First prize, Wm. Hill Dunman, Troytown. Age, two years. 88. Second prize, Henry Field Fisher, Blandford. Age, about one year and seven months.

Class 2.—SPANISH.—Cock and three Pullets (Chickens of 1853).

96. First prize, Christopher Rawson, The Hurst, Walton-on-Thames, April 1853. 93. Second prize, Cyrus Clark, Street. Age, five months. 94. Third prize, Henry Field Fisher, Blandford. Hatched April.

Class 3.—DORKING (Coloured). Birds exceeding one-year-old. Cock and two Hens.

98. First prize, J. Aldridge Devenish, Weymouth. Age, cock one-year-and-a-half, hens two years. 104. Second prize, Henry Field Fisher, Blandford. Age, about one year and three months.

Class 4.—DORKING. Cock and three Pullets (Chickens of 1853).

121. First prize, William Pope, Symondsburry. Age, twenty-one weeks. 111. Second prize, Frederick Bernal, East Hill, Farnham, Hants. Age, five-and-a-half months. 113. Third prize, Austin Cooper Sayers, Clanville House. Hatched the 20th of April. (Class generally commended.)

Class 5.—DORKING (White). Birds exceeding one-year-old. Cock and two Hens.

132. First prize, Mrs. Mills, Bisterne, near Ringwood. Age, eighteen months. 128. Second prize, Mrs. Pattison, Wrackleford. Birds of 1851.

Class 6.—DORKING (White). Cock and three Pullets (Chickens of 1853.)

138. First prize, W. J. Beasant, Milborne St. Andrew. Age, five months. 137. Second prize, William Fookes, Tarrant Monkton. Age, five months. 135. Third prize, Henry Bone, Avon, near Ringwood. Age, five months.

Class 7.—COCHIN-CHINA (Cinnamon and Buff). Birds exceeding one-year-old. Cock and two Hens.

146. First prize, Cyrus Clark, Street. Age, unknown. 148. Second prize, Frederick C. Steggall, Weymouth. Age, unknown.

Class 8.—COCHIN-CHINA (Cinnamon and Buff). Cock and three Pullets (Chickens of 1853).

162. First prize, Mrs. Henry Fookes, Whitechurch. Age, about seven months. 155. Second prize, Joseph Goodenough, Godmanstone. Age,

six months. 206. Third prize, Cossley D. Saunders, Tarrant Hinton. Hatched February, March, and April.

Class 10.—COCHIN-CHINA (Brown and Partridge-feathered). Cock and three Pullets (Chickens of 1853).

226. First prize, Thomas Pantton Edwards, Railway Station, Lyndhurst, Hants. Age, seven months.

Class 12.—COCHIN-CHINA (Black). Cock and three Pullets (Chickens of 1853).

230. First prize, Christopher Rawson, The Hurst, Walton-on-Thames. Hatched April 18th, 1853.

Class 14.—COCHIN-CHINA (White). Cock and three Pullets (Chickens of 1853).

234. First prize, Cyrus Clark, Street. 235. Second prize, Christopher Rawson, The Hurst, Walton-on-Thames. Hatched April 30th, 1853. 233. Third prize, Austin Cooper Sayers, Clanville House. Hatched the 6th of April.

Class 15.—MALAY. Birds exceeding one-year-old. Cock and two Hens.

240. First prize, William Manfield, Dorchester. 246. Second prize, William Pope, Symondsburry. Age, one year and two months.

Class 16.—MALAY. Cock and three Pullets (Chickens of 1853).

249. First prize, William Manfield, Dorchester. 251. Second prize, William Manfield, Dorchester.

Class 17.—GAME FOWL. Birds exceeding one-year-old. Cock and two Hens.

262. First prize, William Brewis, Frampton. Age, eighteen months. 261. Second prize, Thomas Pantton Edwards, Railway Station, Lyndhurst, Hants. Age, two years.

Class 18.—GAME FOWL. Cock and three Pullets (Chickens of 1853).

272b. John Thomas Ensor, Dorchester. Hatched March and April. 270. Second prize, Henry Field Fisher, Blandford. Hatched April. 269. Third prize, James Crane, jun. Tolpuddle. Age, seven months.

Class 19.—GOLDEN-SPANGLED HAMBURGH. Birds exceeding one-year-old. Cock and two Hens.

273. First prize, Mrs. Henry Fookes, Whitechurch. Age, unknown. 277. Second prize, Charles Templer, Bridport. Age, two years.

Class 20.—GOLDEN-SPANGLED HAMBURGH. Cock and three Pullets (Chickens of 1853).

283. First prize, Charles Templer, Bridport. Age, seven months. 384. Second prize, Charles Templer, Bridport. Age, seven months. 278. Third prize, Mrs. Henry Fookes, Whitechurch. Age, five months. (This class highly meritorious.)

Class 21.—SILVER-SPANGLED HAMBURGH. Birds exceeding one-year-old. Cock and two Hens.

286. First prize, Henry Field Fisher, Blandford. Age, about one year and five months.

Class 22.—SILVER-SPANGLED HAMBURGH. Cock and three Hens (Chickens of 1853).

291. Henry Field Fisher, Blandford. Hatched May. 294. Second prize, Mrs. Mills, Bisterne, near Ringwood. Age, six months. 293. Third prize, Mrs. Mills, Bisterne, near Ringwood. Age, six months.

Class 23.—GOLDEN-PENCILLED HAMBURGH. Birds exceeding one-year-old. Cock and two Hens.

296. First prize, Robert Fookes, Milton Abbas. Age, eighteen months.

Class 24.—GOLDEN-PENCILLED HAMBURGH. Cock and three Pullets (Chickens of 1853).

299. First prize, Henry Ker Seymour, Hanford. Age, six months. 301. Second prize, Mrs. Mills, Bisterne, near Ringwood. Age, six months.

Class 25.—SILVER-PENCILLED HAMBURGH. Birds exceeding one-year-old.

302. First prize, Henry Ker Seymour, Hanford. Age, fifteen months.

Class 26.—SILVER-PENCILLED HAMBURGH. Cock and three Pullets (Chickens of 1853).

308. First prize, Richard Genge, Waterson. Age, five months. 312. Second prize, Cossley D. Saunders, Tarrant Hinton. May. 309. Third prize, Joseph Clark, jun., Street, Glastonbury. Age, five months. (Class generally meritorious.)

Class 27.—POLAND FOWL (Black and White Topknots). Birds exceeding one-year-old. Cock and two Hens.

317. First prize, Thomas Pantton Edwards, Railway Station, Lyndhurst, Hants. Age, two years. 319. Second prize, Mrs. Mills, Bisterne, near Ringwood.

Class 28.—POLAND FOWL (Black and White Topknots). Cock and three Pullets (Chickens of 1853).

325. First prize, Thomas Pantton Edwards, Railway Station, Lyndhurst, Hants. Age, twenty weeks. 324. Second prize, Thomas Pantton Edwards, Railway Station, Lyndhurst, Hants. Age, twenty-one weeks. 326. Third prize, Thomas Pantton Edwards, Railway Station, Lyndhurst, Hants. Age, twenty-one weeks.

Class 29.—GOLDEN-SPANGLED POLANDS. Birds exceeding one-year-old. Cock and two Hens.

330. First prize, Cyrus Clark, Street. Age, unknown. 331. Second prize, William Symonds, Weymouth. Age, unknown.

Class 30.—GOLDEN-SPANGLED POLANDS. Cock and three Pullets (Chickens of 1853).

335. First prize, James Crane, jun., Tolpuddle. Age, seven months. 336. Second prize, James Crane, jun., Tolpuddle. Age, seven months. 334. Third prize, Cyrus Clark, Street. Age, four and five months.

Class 31.—SILVER-SPANGLED POLANDS. Birds exceeding one-year-old. Cock and two Hens.

342. First prize, Cyrus Clark, Street. Age, unknown. 344. Second prize, Christopher Rawson, The Hurst, Walton-on-Thames. Aged.

Class 32.—SILVER-SPANGLED POLANDS. Cock and three Pullets (Chickens of 1853).

346. First prize, William Symonds, Weymouth. April. 345. Second prize, Cyrus Clark, Street. Age, six months.

Class 33.—BANTAMS (Gold or Silver-laced). Cock and two Hens.

356. First prize, Christopher Rawson, The Hurst, Walton-on-Thames. Aged. 354. Second prize, James Crane, junr., Tolpuddle. Age, one year.

Class 34.—BANTAMS (Black, White, or any other variety). Cock and two Hens.

368. First prize, Mrs. Mills, Bistern, near Ringwood. Age, one year. 363. Second prize, William Symonds, Weymouth. Age, unknown.

Class 35.—GEESE (of any breed). Gander and one Goose.

380. First prize, Thomas Panton Edwards, Railway Station, Lyndhurst, Hants. Age, unknown. 372. Second prize, Mrs. Hill Dunman, Troystown. Age, forty-two months.

Class 36.—DUCKS (of any breed). Drake and two Ducks.

417. First prize, Thomas Panton Edwards, Railway Station, Lyndhurst, Hants. Age, six months. 412. James Crane, junr., Tolpuddle. Age, seven months.

Class 37.—TURKEYS (of any breed). Cock and one Hen.

431. First prize, William Manfield, Dorchester. 435. Second prize, Christopher Rawson, The Hurst, Walton-on-Thames. Aged.

TO CORRESPONDENTS.

* * We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

GOLD FISH.—"T. R. will be most happy to see G. W., if, any day that is convenient to him, he will call at Pagoda Cottage, near Mulberry Lane, Dover Road; and he will be glad to hear G. W.'s experience on the subject of the Gold Fish of China, the care of which contributes so much to the amusement of the Chinese ladies, who call them to their food with a whistle. He will also be happy of the opportunity of showing G. W. his collection of beetles from the same country; also a fine stuffed specimen of the aquatic bird used in certain provinces of that country, and trained for the purpose of catching fish. It is, he believes, a species of cormorant. As to the secret method by which the Bonzes of Fo change the colours of their fish, he could obtain no information, as the jealousy and caution with which the Chinese admit strangers to be witnesses to their inventions must be as well known to G. W. as to himself, and also the Bonzes are only allowed to instruct their young disciples, who are brought up to succeed them in their priesthood."

PEARS (A Novice).—The *Bourre d'Arenberg* is a different Pear from *Colmar d'Arenberg*, and is preferable to it. The *Bergamotte d'Esperance* must be *Bergamotte d'Esperen*, a new variety in use during March and April.—H.

APPLE (H. S. Welling).—It appears to be a seedling Apple, and of little value, to judge from the state in which it was received.

PEARS (G. P. H. Oxford).—The *Louise Bonne de Jersey* and *Folette* Pears are quite distinct. They are both beautiful, and very excellent varieties, but which is the better one is difficult to say. The former is ripe in October, the latter in January, and is by far the more beautiful of the two.—H.

FRUIT TREES FOR A WALL IN THE ELEVATED PART OF DERBYSHIRE (W. W.).—On the East wall you will require twelve trees; and, as you intend to confine them to Pears, Plums, and Cherries, you cannot do better than have of PEARS—2 Marie Louise, 2 Passe Colmar, 2 Folette. PLUMS—1 Greengage, 1 Royal Hative, 1 Reine Claude Violette. CHERRIES—1 Black Tartarian, 1 Black Eagle, 1 Elton. On the West wall, twelve trees also: PEARS—2 Beurré d'Amaulis, 2 Glout Moreau, 2 Hacon's Incomparable. PLUMS—1 Precoce de Tours, 1 Coc's Golden Drop, 1 Kirke's. CHERRIES—1 Mayduke, 1 Early Purple Guigne, 1 Bisarré Napoleon. On the South wall of 166 feet, you can have of PEARS—2 Nelis d'Hiver, 2 Beurré de Ranse, 1 Jean de Witte. On the East wall, 93 feet—PEARS—2 Knight's Monarch and 2 Thompson's. All these will do well in your locality.—H.

FRUIT TREES FOR A WALL IN DURHAM (*Fructus, Saltwell*).—You will require twelve trees, which, to save time, you should procure, ready dwarf trained, of some respectable nurseryman. You do not say whether you want Peaches, Nectarines, or Apricots, Apples, Pears, Plums, or Cherries; but, as your aspect is due south, you cannot do better than grow, in the northern part of Durham, the following:—PEACHES—1 Royal George, 1 Noblesse. NECTARINES—1 Elrue, 1 Violette Hative. APRICOTS—1 Large Early, 1 Royal. PEARS—1 Passe Colmar, 1 Nelis d'Hiver. PLUMS—1 Purple Gage, 1 Royals Hative. CHERRIES—1 Early Purple Guigne, 1 Elton.—H.

WINTERING GERANIUMS (*Ibid*).—When "drying" these is mentioned, it is intended that the whole of the plants should be free from wet; and when "kept in the upper room of the house," that they should be left in their pots, and little or no water given during the winter.

HEAT FOR A GREENHOUSE (*Caroline*).—You require to ripen Grapes by August and September. It is very likely your gardener is right, but we should have known more about it if you had mentioned what you have omitted—the size and length of your piping for hot water. If during severe frost in winter—say fifteen or twenty degrees below the freezing point—you could keep your greenhouse plants in a temperature of 45°,

then you have sufficient means for ripening Grapes in September—taking out most of your plants by the end of May. At a rough guess, in a house 31 feet by 16, and we suppose some front glass, you would require some sixty feet of four-inch pipe; and, if the pipe were smaller, more of it in proportion. If you wished the Grapes earlier, more would be required, unless you resorted to covering. It would not be of great use putting on large fires to ripen wood in the end of October; that should have been helped in the end of August.

NET FOR FRUIT TREES (M. L. D.).—Nottingham Lace is very cheap, if only required to keep out flies and wasps. It is generally sold in pieces, and these, for something like 25s, will give you a great number of square yards, it being generally three or four yards wide.

SUCKERS ON FUCHSIAS (*Ibid*).—When a symmetrical stem is the object these should be removed. They will make plants neither better nor worse than common cuttings, when subjected to the same treatment, though if you get a root with them you have a trifling advantage.

BUDDLEA LINDLEYANA (*Ibid*).—Keep this in the greenhouse, or a cold pit; get some young plants of it, and then plant the old one out in a rather sheltered place, in a compost of peat and loam, well drained.

GRAFTING CAMELIAS AND ORANGES (W. T.).—We prefer the spring, just before the young shoots, used as scions, should to elongate; but it may be done at any time, when these conditions are found in ripened wood as scions, and a close moist heat of from 55° to 65° can be secured for placing the plants in, so as to promote a quick union.

STRIKING CUTTINGS (*Ibid*).—Whether will cuttings of hard-wooded plants strike quicker and best, in a hot or in a cold frame? There is no royal road here. It depends entirely on the circumstances of the plant from which cuttings are taken. If that is excited, and growing freely, then a little heat would be best. If in a dormant state, put them in a cold frame. For instance, here are *Calceolaria* cuttings taken from plants out-of-doors; put them in heat now, and if a ticklish sort, the most of them will bid you good-bye. Place them under a hand-light in a shady border, and just keep frost from them, and every one will strike, though they may take six or more weeks to do so. Take the tops of these same plants, or cuttings, when growing freely, next March or April, and place them as cuttings in a mild hotbed, and they will strike in fewer days than they required weeks in autumn. Reason and think on this simple fact, and a key will be given you to unlock all the secrets as to the position and heat certain cuttings should have.

VINE BORDERS (J. R.).—The best time for making them is dry weather now. The best mode is to have the most of it above the ground level, flagged, and a chamber underneath, with the means of heating this chamber at pleasure. The next best and cheapest is to have the border, partly, at least, above the ground level, the bottom of the border sloping from back to front, for a foot in twelve or fifteen feet in width, and there terminating in a deep drain. The bottom should then be concreted, and then have, when dry, from eight inches of broken bricks, stone, and rubble thrown over it, with a little rough gravel as a finishing, and then it would be ready for the soil. This should be fully two-and-a-half-feet deep at first, as it will compress to about two feet, and should be nice loam, fibry, and mixed with lime rubbish freely, and a very fair allowance of broken bones. The top of the border must slope quite as much as the bottom, or rather more. The Vines may be planted in spring, or they may be started in the inside of the house, or in another hothouse, and be turned out in the border in June. In the latter case, it is necessary that the soil should be aired and heated before planting, that warm water be used at planting, and means taken to prevent the young plant receiving any check. By these means strong rods may be procured the first season.

VARIOUS FRUITS, &c., FOR NORTH CHESHIRE (J. R. C.).—Plums for a west wall—one or two Greengage, Kirke's, or Victoria. Plums for Standards—besides Damsons, Early Orleans, Orleans, Washington, Victoria, Purple Gage. For Espaliers—Greengage, Purple Gage, Washington, Drap d'Or, Drap Rouge, Kirke's. Roses under a south wall—some of them Yellows. *Bourbons*—Charles Souchet, Dupetit Thouars, Paul Joseph, Souvenir de la Malmaison. *Chinas*—Mrs. Bosanquet, *Cramoie superieure*. *Tea-scented*—*Devoienensis*, *La Pactole*, *Nephetos*, *Queen Victoria*, *Safrano*, *Vicomtesse de Cazes*, *Flavescens*. *Noisette*—*Aimee Vibert*, *Euphrosyne*, *Lamarque*, *Cloth of Gold*, *Solfaterre*.

ERRATA.—1st column, page 43, line 31 from top, change "flags" into "glass." 2nd column, line 38, after above, add "the ground level."

CEYLON JUNGLE FOWLS (W. Johnson Wyatt).—The following is the answer of the owner of the "Ceylon Jungle Fowls," to your queries on an enclosed feather—"I have examined the feather you sent me, and find that in the markings and colour it resembles the feathers of my dark Ceylon fowl; but the brown margin of yours is both darker and browner than mine; although not identical, yet they are very like. I think the one you sent me is from a larger fowl than mine."

GUINEA FOWLS.—A. D. obliges us by writing as follows:—"Having read in your publication that Guinea Fowls do not lay again in the nest from which their eggs are taken, unless replaced by others, you may be interested in knowing, that three years ago one of my sisters had a pair of Guinea Fowls, and that the hen laid an egg daily (with hardly an exception) for seventy days or more; each day the nest was regularly visited, and the fresh egg taken away, only one egg during the whole time being left in the nest; the same plan has been pursued here last season and this, a change of nest being rarely the consequence."

NEW FUCHSIAS (T. F.).—The following are good new Fuchsias, such as would suit your purpose:—*Collegian* (Banks); deep crimson tube; purple corolla. *Dr. Lindley* (Banks); glossy-crimson; tube and sepals dark purple; corolla well reflexed. *Glory* (Banks); crimson tube; sepals dark purple; corolla extra fine. *King Charming* (Mayle); scarlet tube and corolla, purple corolla; fine shape. *Model* (Turner); crimson tube, deep purple corolla; well reflexed; a free bloomer. *Premier* (Henderson); tube and sepal rich crimson, plum-shade-colour; dark corolla. *Hendersonii*; crimson tube; double, dark, almost black corolla; extra fine. *Duchess of Lancaster* (Henderson); tube and sepals pure white; deep rose corolla, with violet tinge; well reflexed; a fine variety. *England's Glory* (Harrison); tube and sepals white; crimson-lake

corolla; stout and well reflexed. *Mrs. Patterson* (Patterson); white, with purple corolla; large and fine. If you have these you will possess some of the finest varieties of the season.

ORCHIDS IN A COMMON STOVE (*A Son of Willess*).—Yes. You will be able to grow in a common stove, *Oncidium altissimum*, *O. flexuosum*, and *Stanhopea insignis*. The latter must be grown in a basket. The others should be potted in rough fibrous peat, mixed with small pieces of charcoal. Pot them them high up in the pots, and give water only when they are growing. The following may be added to your stock of Orchids:—*Dendrobium densiflorum*, *D. nobile*, *Epidendrum macrochilum*, *Lælia anceps*, *L. autumnale*, *Miltonia spectabilis*, *M. candida*, *Oncidium papilio*, *O. Cavendishii*, *Phaius grandiflora*, *P. Wallichii*, *Stanhopea tigrina*, *S. oculata*, *Zygopetalon Mackii*. All these will live in a moderate stove.

SPHAGNUM MOSS (*Ibid.*).—This is a white Moss, growing in wet bogs in most parts of Britain.

BOTTOM HEAT FROM FLUES (*Agricola*).—If, as we imagine, you purpose carrying a flue direct from the furnace under one bed, and returning it under the other, there is not the slightest doubt but it will produce a sufficiency of heat, and answer perfectly well. The difference between it and dung-heating, is that the more drying effects of one heated flue will cause some little more trouble in keeping the bottom part of the soil in which the Melons are planted moist; to meet which, in a measure, the flue must by all means be covered with dish-tiles, kept constantly filled with water. We also suggest, that a few holes be left in the walls forming the sides of the passage, to communicate with the chamber, and each to be fitted with a slide or shutter; as, by this means, a thermometer may at any time be introduced to ascertain the degree of heat, and allowed to escape, if necessary, which may probably often be the case if an injudicious hand attends the fire. You must, also, bear in mind, that a flue confined as you propose is not adapted for very early or very late crops, unless you have some other means of obtaining top-heat. Atmospheric moisture must be produced, by some means or other, whether you confine your flue or not, otherwise your plants will soon be tainted with that little ruinous pest, the red spider.

TACRONIAS (*Climber*).—Your questions being of general interest, we shall devote an extra column next week to the subject. At present there is no immediate hurry about them.

BULBS (*An Old Un*).—No; the Horticultural Society must not be blamed for "not growing a specimen of every bulb they introduce." It is quite enough that they introduce them, and see that the Fellows of the Society have them with their proper names; besides, no society ought to do things that can be done equally well by private individuals. Address to the Editor next time.

BLUE WISTARIA (*J. B.*).—The right name is *Wistaria sinensis*, not *Consequana*. The latter was a suggestion by Mr. Loudon, to name it after the man from whose garden, in China, it was first sent to this country; but the law for naming plants is not so easily broken. The culture is very simple indeed—to be planted against a good south or west wall, in good soil, such as would do for Peaches and Apricots; and when it grows very fast while young, to prune the young wood, so as only to leave one-third of its length; a nine-feet shoot cut back to three feet, and so on. After a while, shorter side-branches come—they are to be spurred for flowering as they spur Apricots and Pears against a wall; and when the plant fills its place it is to be pruned yearly, exactly the same way as a Pear-tree against a wall. Young plants of it, if once stunted, so as to become *hide-bound*, as often happens, are very difficult to push along. The easiest and cheapest way to manage a *Wistaria* that does not start the second season after planting, is to pull it up and cast it over the garden wall, and plant a more healthy one in its place. The second best way is to train it along close to the surface of the ground, to cause a sucker to come from the bottom, and to make a new plant of the sucker; and the third best way is to head down the plant—but this very often ends in death. From the middle of March to the middle of April is the best time to winter-prune, or to cut down, a plant of this climber.

SAMBUCUS RACEMOSA.—"There is a fine plant of *Sambucus racemosa* in the Botanic Gardens, Bury St. Edmund's, and I shall have much pleasure in forwarding cuttings (which, I have no doubt, would root freely) to your correspondent 'H. M.,' if he will favour me with his address.—N. S. HODSON, Bury St. Edmund's.

DISEASED FOWLS (*Etouensis*).—I have never met with fowls diseased in the manner described; and in the absence of more specific details it is difficult to suggest a remedy, as I am unable to judge whether the lump in the throat is external or internal, or if it proceeds from a disease of the gullet, windpipe, or the glands; nor is it stated whether there is any ulceration or not. If our correspondent will forward me further particulars, with a stamped and directed envelope, I shall be most happy to reply immediately.—W. B. TEGTMEIER, *Tottenham, Middlesex*.

TURNIPY MILK (*Rusticus*).—The small quantity of saltpetre you use to remove this flavour cannot be injurious.

LISTS OF SUITABLE FRUITS.—Parties applying for them should state not only the aspect, but the elevation above the sea, and the locality.

PEAS (*J. C.*).—You will have seen what was stated in our last number. We never heard of "filtered rains."

POTATORS (*Agriculturnist*).—"Prince of Wales" is in private hands. The others you can obtain of any seedsman in London.

ASPARAGUS SEEDLINGS (*A. H.*).—If any happen to spring up where there is a blank space from the failure of an old plant, let them remain there; otherwise, remove them all.

TREATISE OF THE VINE (*Cora*).—Look at page 255 of our last volume.

FILBERTS (*Lewis*).—You cannot have the address. The Filberts may be purchased of any nurseryman who advertises in our columns.

THE COTTAGE GARDENER (*T. B.*).—Send your address and statement of the irregularity to Messrs. W. S. Orr & Co., Amen Corner, Paternoster Row, London.

BANTAMS DYING (*Mr. S. D.*).—We have no doubt they were poisoned. **LANDSCAPE GARDENING** (*A Weekly Subscriber*).—We cannot recommend any one. Those willing to furnish plans, if they would advertise in our columns, would have plenty of applications.

PLANS OF POULTRY HOUSES (*A. H. M.*).—We know an architect who furnishes drawings and working plans of them at a very moderate

charge. You must send the size of the ground and the aspect. *Dorkings* vary in price, from five shillings each to as many pounds.

CRYSTAL PALACE (*A Young Gardener*).—Write to Mr. Groves, Secretary, Crystal Palace Office, London Bridge.

TOTTINGTON SHOW (*R. E. A.*).—The Committee, not considering it of sufficient interest to our readers to advertise it in our columns, cannot surely ask us to differ from that opinion, and to publish their prize-list.

DRAINING (*A. Atkinson*).—As you very properly wish to drain thoroughly, have your cross-drains twelve feet apart, and use pipes two inches in diameter.

WHEEZING IN A SILANGHAE COCK (*S. B. T.*).—We fear the symptoms are consumptive. Keep him in a sheltered dry shed; give him only soft nutritive food; and a desert spoonful of Cod-liver Oil every day. Mix the latter with meal into small fingers, and push them down his throat. Thanks for your hints; the index, we fear, would not pay for printing.

SHELLINGS.—A Subscriber wishes to know what is meant by "Shellings" for feeding poultry, and mentioned by H. G. at p. 50.

WORK ON GARDENING (*A Clerk*).—"The Cottage Gardeners' Dictionary" will give you the exact information you require.

MUSSEDA FRONDOSA (*Moir*).—Your account agrees with that of this plant. It is a stove plant, and if you have no hothouse, get some nurseryman to keep it in his through the winter.

NAMES OF PLANTS (*C. B.*).—Yours is *Mirabilis Jalapa*, Marvel of Peru, or Four o'clock Plant. (*W. H. S.*) No. 1. *Mantaea pedunculata*. No. 2. *Tagetes lucida*. (*D. G. C.*) 1. *Browallia elata*. 2. *Chelon obliqua*. 3. *Chrysocoma Linosyris*. (*A. K.*) *Eucnemis punctata*. (*W. Carter*). No. 1. Cannot tell from the tip of a shoot, but this is like one from *Amygdalus nana*. No. 2. *Colutea arborescens*. (*Azile*) *Alyssum maritimum*, or Sweet Alyssum.

NAMES OF PEARS (*A. B. C.*).—No. 1. *Crasanne*. 2. *Marie Louise*. 3. *Bergamotte Cadette*. 4. *Chaumontel*. 5. *Brown Beurré*. 6. *St. Leziu*. 7. *Chaumontel*. 8. Not received. 9. *Marie Louise*.

POULTRY SHOWS.

BIRMINGHAM. Dec. 13, 14, 15, and 16.

BRISTOL. Dec. 6, 7, and 8.

CAMBRIDGESHIRE (Newmarket). Nov. 8, 9, and 10.

CORNWALL (Penzance). Dec. 27 and 28.

DERBYSHIRE AND MIDLAND COUNTIES. Nov. 17 and 18.

DUBLIN AMATEUR. Dec. 6, 7, and 8.

EASTERN COUNTIES (Norwich). Nov. 29, 30, and Dec. 1.

GREAT NORTHERN (Doncaster). Nov. 30—Dec. 1.

HITCHIN AND HOME COUNTIES. Nov. 18, 19, and 21.

HONITON AND EAST DEVON. Dec. 28 and 29.

KENDAL. Dec. 22, 23, and 24.

SOUTH HAMTS (Southampton). Nov. 24 and 25.

WINCHESTER AND SOUTHERN COUNTIES. Nov. 16 and 17.

YORKSHIRE (Leeds). Dec. 6, 7, 8, and 9.

LONDON: Printed by HARRY WOOLDRIDGE, Winchester High-street, in the Parish of Saint Mary Kalendary; and Published by WILLIAM SOMERVILLE ORR, of Church Hill, Walthamstow, in the County of Essex, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—November 3rd, 1853.

Advertisements.

THE ESSEX ASSOCIATION for the IMPROVEMENT OF THE BREEDS OF POULTRY.

The FIRST EXHIBITION of this Society will be held at Mr. Griffin's Sale Repository, Colchester, on the 24th, 25th, and 26th of November, 1853.

All entries to be made and paid for before November 5th, after which day double entrance fees will be charged until November 15th, when the list will finally close.

Certificates of entry are now ready. All entries must be made on the printed certificates issued for that purpose, and accompanied by the amount of entrance fee.

Subscribers of 10s 6d will be entitled to two cards of admission to the Private View, (Thursday, November 24th), and during the other days of exhibition; Subscribers of £1 is to four cards of admission; and Donors or Subscribers to a larger amount, to additional cards in the same proportion.

Copies of the Prize List and Regulations will be forwarded, post-free, on receipt of four postage stamps, addressed to the Secretaries, Essex and West Suffolk Gazette Office, Colchester.

W. R. WILSON, Stanford-le-Hope, } Hon. Secs.
Wm. A. WARWICK, Gazette Office, Colchester, }

* * * Post Orders should be made payable to Mr. Wm. A. WARWICK.

CALCEOLARIAS AND GERANIUMS. — JOHN

BARRETT has to offer some fine healthy plants of the above, eight inches over, saved from first-rate kinds. Parties wishing to compete for prizes will do well to avail themselves of this opportunity—15s. per doz. Geraniums, fancy and show; best show kinds, large plants for specimens in spring, 12s. to 18s. per dozen.

Post Office Order for amount, or reference. Plants sent to compensate for carriage.—Cotton Lane Nursery, Bury St. Edmund's.

TO PIGEON FANCIERS.—Wanted to Purchase,

a few pairs of Blue or Yellow Fantails, Blue Jacobines, Red or Yellow Nuns, Red or Yellow Barbets, Red Owls, Blue or White Carriers, and Black Piece Pouters.

Address, stating price and full particulars, to HENRY CHILD, Jun., Sherbourne Road, Balsall, Birmingham.

A few pairs of first-class FANCY PIGEONS for Sale.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, Sent Free for Three Penny Stamps.

NEW GERANIUMS of last season, Hoyle's, Foster's, Dobson's, &c. The following 18, all new of last season, for 6s., or our selection of 12 for 4s., or separately as priced:—*Astrea*, 5s.; *Albina*, 3s. 6d.; *Butterfly*, 3s. 6d.; *Kulla*, 3s. 6d.; *Lagoma*, 5s.; *Leonora*, 5s.; *Novelty*, 3s. 6d.; *Portia*, 5s.; *Zaria*, 5s.; *Eleanor*, 3s. 6d.; *National*, 3s. 6d.; *Optimum*, 10s. 6d.; *Rachel*, 5s.; *Queen of May*, 5s.; *Harriet*, 3s. 6d.; *Jupiter*, 3s. 6d.; *Spot*, 5s.; *Vulcan*, 5s.

NEW FANCY GERANIUMS of last season, Ambrose's, Henderson's, &c. The 12 for 36s. *Barrier*, 3s. 6d.; *Darling*, 5s.; *Goliath*, 3s. 6d.; *Maecium Bonum*, 5s.; *Princess Alice Maude*, 3s. 6d.; *Criterion*, 3s. 6d.; *Fanny*, 3s. 6d.; *Flora M'Yvor*, 3s. 6d.; *Lady Downs*, 3s. 6d.; *Marginalia*, 3s. 6d.; *Wilmore's Surprise*, 2s. 6d.; *Triumphant*, 3s. 6d. 25 superb show Geraniums, 40s. 25 choice Geraniums, 22s. Fine varieties 6s to 9s per dozen. 12 choice fancy varieties, 13s. 12 fine varieties, 9s.

NEW CHRYSANTHEMUMS—Large Flowering.—The following 12 superb, well set with flower buds, new varieties of last season, for 12s., or 1s. 6d. each, except priced:—*Amazon*, *Albiade*, *Astrolabe*, *Christopher*, *Columbe*, *Conspicua*, 2s. 6d.; *Delicata*, *Fortune*, *Leon Faucher*, *Lingot d'Or*, *Neil Gwynne*, *Poudre d'Or*, and *Rantonelle*.

NEW LILLIPUTIENNE CHRYSANTHEMUMS.—The following 12 superb new varieties of last season for 12s., or 1s. 6d. each:—*Ariadne*, *Beauty of Toulouse*, *Roquet parfait*, *Cybele*, *Dame Blanch*, *Graziella*, *Grand Sultan*, *Lais*, *President Decaisne*, *Toison d'Or*, *Ukraine*, *Golden Drop*.

60 splendid varieties of Chrysanthemums, including the above, for 40s. 40 varieties, ditto, 30s. 25 varieties, ditto, 17s. 6d. The best older varieties, 5s, 7s. 6d., and 9s. per dozen.

Cinerarias, 12 choice varieties 9s and 15s
Azalea indica, 12 ditto, strong bushy plants 18s
Ericas, 12 choice varieties, for winter and spring flowering .. 15s
Camellias, 12 choice varieties 30s to 42s
50 vars. fine and select greenhouse plants 45s
25 ditto, stove plants 35s
24 vars. fine winter and early flowering greenhouse plants .. 40s.

12 vars. do. do. do. 15s to 20s
12 vars. do. do. do. 25s
25 vars. fine standard Roses, 28s; 12 vars. do. do. 15s
25 vars. dwarf do. do. 10s 6d., or 12 for 6s
12 vars. fine Climbing Roses 6s. to 9s

Mixed dwarf Roses 3s per dozen, or per 100 20s
FRUITS, &c.—25 finest prize *GOOSEBERRIES*, strong 2 and 3-year s. d. plants 10 6

Good named varieties, per doz., 4s; mixed, per doz. .. 2 6
STRAWBERRIES.—*Goliath*, *Keens'* Seedling, *Black Prince*, *Eleanor*, *British Queen*, *Alice Maude*, *Fertilised Hautbois*, and *Eliza*, each per 100 3 0

Myatt's Surprise and *Rivers'* *Eliza*, per 100 5 0
RHUBARB.—*Royal Albert* and *Linnaeus*, each 1s, or per doz. .. 9 0
Victoria Giant, each 9d., or per doz. 7 6

Prince of Wales, each 3 6
Trained Peaches, Nectarines, Apricots, Standard and Dwarf Apples, Pears, Plums, Currants, Raspberries, Grapes, Cherries, &c., of the finest sorts.

HARDY HERBACEOUS PLANTS.

100 distinct and showy varieties, 30s; 50 varieties 17 6
100 superior and new ditto, 50s; 50 varieties 30 0
25 fine Rock plants, 12s; 12 varieties 7 6

HUGH LOW, and CO. have to

offer very fine, strong, bushy plants, full of flower-buds, of Chrysanthemums, including the continental varieties of the present season. Price per dozen, 9s. *Dielstra spectabilis*, extra large roots, suitable for forcing in winter, 21s. per dozen.

Clapton Nursery, London.

HUGH LOW, & CO. would invite

inspection of their extensive and fine Nursery Stock, more particularly *Camellias*, *Indian Azaleas*, *Ericas*, *Eparis*, and other plants suitable for making a display during winter, all of which are well set with flower-buds, and can be had of different sizes.

H. L. & Co. are also growers of fruit-trees, and their stock this season, of both trained and maidens, is large and fine, including the leading varieties which are grown in quantities for the trade.

Clapton Nursery, London, October 1, 1853.

HOLLYHOCKS, &c.—JOHN

CHATER and SON offer the following collection of Plants, true to name, and fine kinds, for 21s., hamper and package included, sent carriage free to London, Norwich, or Colchester. The Hollyhocks are strong ground roots. Twelve choice Hollyhocks, Six Rock Plants, Twelve Pansies, Six pair Pinks, Six strong Pillar or Dwarf Roses, Six German Daisies, Six Double White Rockets.

C. & SON'S Seedling Hollyhocks of 1853 will be ready by November to send out, viz.: *Glory of Haverhill*, *Admirable*, *Duke of Rutland*, and *Remarkable*.

For description, see List, which may be had of J. CHATER & SON, Nurseries, Haverhill, Suffolk.

CHOICE NEW SHOW GERANIUMS OF LAST SEASON.—

HENRY WALTON, Florist, &c., Edge End, Marsden, near Burnby, Lancashire, is prepared to send out strong, healthy plants of the following, in 4-inch pots, at the very reduced prices annexed.

GERANIUMS.—*Foster's* Optimum, *Queen of May*, *Rachael*, *Hervine*; *Hoyle's* *Astrea*, *Leonora*, *Zara*, *Lagoma*, *Cordelia*, *Kulla*, *Butterfly*; *Dobson's* *Harriet*, *Jupiter*, and *Purplea*; any 12 of the above, with a plant of *Henderson's* Extravaganza, for 36s. hamper, &c., included.

GERANIUMS.—*Ariadne*, *Ambassador*, *Arethusa*, *Beatrice*, *Bride of Abydos*, *Chloe*, *Commissioner*, *Cristine*, *Claudiana*, *Enchantress*, *Exactum*, *Elise*, *Flying Dutchman* (*Turner's*), *Ganyuade*, *Jullien*, *Lablache*, *Lavinia*, *Lord Mayor*, *Little Nell*, *Lord Gough* (*Bragg's*), *Lancashire Witch*, *Pulchra*, *Painter Improved*, *Rubens*, *Renown*, and *Surprise*; any 12 of the above for 18s., or 20 for 30s. The above are strong, healthy, and well-rooted, and such that cannot fail to give satisfaction.

FANCY GERANIUMS, including all the leading kinds, strong plants, 18s. per dozen.

FUCHSIAS, new varieties this season, including *Glory* (*Bank's*), *England's Glory*, *Vesta*, *Collegian*, *Perfection*, *Dr. Lindley*, *Lady Montague*, &c. 18s and 21s per dozen.

CINERARIAS.—*Roger's* *British Queen*, *Uttoseter Pet*, *Dagobert*, *Lady of the Lake*, *Brilliant*; *Mangles's* *Enchantress* and *Hebe*; *Cole's* *Tyrian Prince*, and *Henderson's* *Prima Donna*; the above 9 for 14s.

CINERARIA.—*Alba Magna*, *Catherine Seaton*, *Gustavus*, *Iago*, *Jetty Treffz*, *Lady Hume*, *Campbell*, *Lettice Arnold*, *Hammersmith Beauty*, *Mrs. Sidney Herbert*, *Mr. Sidney Herbert*, *Mrs. Charles Kean*, *Marianne*, *Magnum Bonum*, *Nonsuch*, *Orpheus*, *Rosy Morn*, *St. Clair of the Isles*, *Surprise*, *The Village Queen*, and *Unique*; any 12 of the above for 15s; older varieties, 6s, 9s, and 12s per dozen.

AZALEA INDICA.—Strong plants, well set with flower buds, 18s. per dozen.

CAMELIAS.—Well set with flower buds, 2s. 6d. each; or, 25s, 30s, and 42s per dozen.

PANSIES.—All the newest Scotch and other varieties, 18s per dozen; older varieties, 6s. 9s. and 12s. per dozen.

SALTER'S FANCY PANSIES.—2s each, a set of 13 for 18s.

SALTER'S NEW IMPROVED DAISIES.—1s each, or 12 for 9s.

CARNATIONS.—50 superior named sorts, 1 pair of each, £2; 25 ditto, £1.

PICOTEES.—50 superior named sorts, 1 pair of each, £2; 25 ditto, £1.

PINKS.—25 superior named sorts, 1 pair of each, from 8s to 12s.

Descriptive Lists of the above may be had for one stamp. Every article in the Nursery trade supplied on the lowest remunerative terms.

It is respectfully requested that all Orders be accompanied with a Post-office Order, payable at Marsden, Lancashire. Early Orders will ensure the strongest plants.

FIRE ANNIHILATOR, or VAPOUR FIRE ENGINE.—

Its practical value proved incontestably by 20 remarkable cases of successful use.—See BRADSHAW of this month, p. 142. Engines for Dwelling-houses, £3 to £1.—Office of the Fire Annihilator Company, No. 105, Leadenhall-street, London.

WEEKLY CALENDAR.

M D	D W	NOVEMBER 10—10, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
10	Th		30.032—29.937	50—42	N.W.	06	12 a. 7	16 a. 4	0 43	9	15 55	314
11	F	Bunting mute.	29.706—29.408	54—48	S.	1.02	14	15	1 50	10	15 48	315
12	S	Wood Pigeons flock.	29.558—29.487	49—44	E.	13	15	13	3 10	11	15 40	316
13	SUN	25 SUNDAY AFTER TRINITY.	29.496—29.412	48—44	E.	22	17	12	4 22	12	15 32	317
14	M		29.362—29.225	54—46	E.	1.24	19	11	5 33	13	15 23	318
15	Tu	Beech leafless.	29.071—28.989	58—49	S.W.	34	21	9	rises.	☺	15 13	319
16	W	Teal arrives.	29.057—28.848	60—49	S.W.	12	22	8	4 a 39	15	15 2	320

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 55.8° and 40° respectively. The greatest heat, 63°, occurred on the 12th in 1841; and the lowest cold, 15°, on the 16th in 1841. During the period 95 days were fine, and on 87 rain fell.

NEW PLANTS.

ONCIDIUM HARTWEGI (*Hartweg's Oncid.*).

This Orchid was found by Mr. Hartweg, on rocks near Loxa. Flowers small, and brownish, with yellow spots.—(*Horticultural Society's Journal*, viii. 319.)

PHACELIA RAMOSISSIMA (*Branchiest Phacelia*).

This annual is a native of California. Natural Order of Hydrophylls, and Pentandria Monogynia of Linnæus. Its flowers of dirty white are of no beauty.—(*Linnean Transactions*, xvii. 280.)

LEPTOSIPHON CILIATUM (*Hair-fringed Leptosiphon*).

This Californian annual has small flowers having a brown hairy tube, yellow throat, and a pink border. Its specific name is founded on the long, transparent, jointed hairs on the leaves.—(*Horticultural Society's Journal*, viii. 319.)

LILIUM ROSEUM (*Rosy Lily*).

This is a native of Hindostan, at Kamaon, Mussooree, and Almora, at an elevation of 8000 feet. It flowered in a cool frame at Kew Gardens, during the April of 1853. Its stem, including the flower, is not more than eighteen inches high. The flowers, in a slightly diffuse cluster, about eight or ten in number, are lilac rather than rose-coloured. It has been also called *Fritillaria Thomsoniana* and *Lilium Thomsonianum*.—(*Bot. Magazine*, t. 4725.)

LOPEZIA MACROPHYLLA (*Large-leaved Lopezia*).



This is a greenhouse plant, native of Mexico and Guatemala, and flowered in a greenhouse at Kew, in March, 1853. It is a half-shrubby plant, not unlike a Fuchsia, and the flowers are bright red. It has been called, also, *Lopezia grandiflora*, and *Jehlia fuchsoides*. Lopezia belongs to the Natural Order of Onagrad and to Monandria Monogynia of Linnæus.—(*Botanical Magazine*, t. 4734.)

It is no insignificant testimony to the kindness and providence of God, that, go where you will, you find Grass and Cabbages. Where they are, cattle and man are sure of food.

With the tribe of Grasses we shall not deal upon the present occasion, but we will bear testimony that in no latitude where man can live does the Cabbage refuse to bear him company. This fact seems to have struck the Roman poet, for he sings of

“That herb, which o’er the whole terrestrial globe
Doth flourish, and in great abundance yields
Alike to plebeian and to haughty king
In winter, Cabbage, and green sprouts in spring.”*

Navigators and travellers, since Columella wrote, have found another quarter of the world, and have explored regions untrodden in his days; yet, go where they will, there is the Cabbage. Wild, as well as cultivated, there it is—no latitude of the tropics is so hot, no arctic region so cold, no mountain ridge of the Himalaya so elevated—but, if the hut of man can rest there, there will the Cabbage grow by its walls.

* “toto quæ plurima terræ
Orbe virens pariter plebi, regique superbo
Frigoribus caules, et vire cymata mittet.”

Columella, x. 127.

Even in its native form the *Brassica oleracea sylvestris*, or Wild Cabbage, is spread over all Europe. *Brassica campestris*, the wild Navew, and parent of the Swedish Turnip, is found in regions whose boundaries are the Crimea and Lapland; *Brassica Chinenensis*, or Chinese Cabbage, is common in the Celestial Empire; *Brassica Magellanica* abounds in the inhospitable climate of Cape Horn; even the isolated island of St. Helena has its *Brassica Helleniana*; Africa has its *Brassica lyrata*, and North America has its *Brassica Washitana*. Nor are these merely untameable species. M. de Serra, writing of that last named, says—“The Americans settled on the Washita River, and in the Arkensaw territory, as well as the travellers who have visited those countries, speak in terms of commendation of a species of Wild Cabbage, which grows plentifully in those countries, and produces red flowers. Muhlenberg, the famous American botanist, in his ‘Catalogue of North American Plants,’ page 61, has given to it the name of *Brassica Washitana*. I wish the Horticultural Society would attempt the introduction and civilisation of this vegetable. From the effects produced by cultivation in other plants of this family, we may expect, in

a short period, a number of varieties, and some of them, probably, very valuable."

As the Cabbage is a native of the whole globe, so we may conclude it has been known throughout all time, for the earliest writers mention it with applause. Even the Talmudists dwell upon it under its Hebrew name, *Caruv*, and with the Greeks the *Crambe*, or Cabbage, was in universal request as one of the most wholesome of vegetables. Their physicians, such as Chrysippus and Dieuches, wrote volumes upon its merits, and from birthday festivals it was never absent. Epiphippus thus tells of some of the delicacies then prepared:

—"Toasted Chersonsian cheese,
And Coleworts tied in bundles seeth'd in oil."

Indeed, so high was the regard for this product of the garden, that it was dedicated to some of their deities; and Athenæus says the Ionians swore by "the Sacred Cabbage!" Passing onward, in course of time we find that the Romans had the same high regard for this vegetable; and Cato dates the decline of the Roman Empire, and the degeneracy of its sons, from the time when they ceased to have the Cabbage as a chief dish of their repasts, and displaced it for foreign luxuries.

We have in their volumes abundance of instruction for its cultivation, but we will make only this one extract from Columella—"The Cabbage should be transplanted when it has six leaves, and when inserted should have its root daubed over with liquid dung, and then be wrapped round with three small bandages of sea-weed. Such treatment renders the produce tender when boiled, and preserves the green colour without the employment of soda. When once the plants are rooted, the oftener they are hoed and manured the better they thrive, and the more luxuriant they become."

The above epitome of Cabbage-culture, as practised about eighteen hundred years ago, is that which may be accepted as the epitome of that adopted by the best kitchen gardeners now, and we have extracted it for the purposes of adding—what will surprise many of our readers—very few persons know what a really good Cabbage is.

A Cabbage of the *Nonpareil*, or other superior variety, sown about the 10th of August, planted out during moist weather in October, amply supplied with liquid-manure in the seed-bed and in early spring; sown and grown upon a rich light soil; frequently hoed, and well-manured with decayed dung, and an occasional sprinkling of salt, unless growing near the sea-side, or unless the surface of the bed can be covered thinly with sea-weed;—a Cabbage thus grown luxuriantly, and without a check, and uncut until within ten minutes of being consigned to its seething, is unknown to few. It is as unlike the sticky, stunted indigestibles usually found in a country garden, or to the flabby, bruised, semi-putrescent masses of a metropolitan market, as "Hyperion to a Satyr;" and we recommend to all our readers, by attending to what we have said, to surprise themselves with a hitherto-neglected luxury. It is no theoretical matter, for we know where such Cabbages

were grown last spring; and their cultivator, in answer to the query, "How did you grow this *real* Vegetable Marrow?" replied—"They never knew what it was to stand still—muck and moisture kept them always growing." We can add our testimony that "muck and moisture" are the magic ingredients of Cabbage culture.

"WHAT kind of poultry do you really advise me to keep?" At page 416 of our last volume, we endeavoured to answer this inquiry with respect to "*Fowls*;" we will now proceed to tender our advice in regard to the other denizens of the poultry-yard.

Our readers, however, should be previously reminded, that a certain class of persons were taken as those for whom our suggestions were specially designed, and these were the clergyman and country gentleman, occupying from fifteen to twenty acres of land under the usual course of tillage. But making allowance for deviations on either side of these conditions, there are, we would hope, many points on which our recommendations may prove useful to the larger holder, on the one side, as well as to the cottager on the other.

Let us commence, then, with *Geese*. Now, wherever a meadow with a small pond or brook is at hand, a gander, with two or three geese, will rarely fail of giving us a good return for their cost. Because, the first fortnight, little care is required for the goslings, and the old birds are not only singularly free from maladies of all kinds, but provide by far the greatest portion of their own food. A Goose, too, is a "*pièce de résistance*" on our table highly appreciated, and which fairly discharges its duty in the reduction of our butcher's bill. By the time the corn is carried, the flock may be turned into the stubble, which are most diligently gleaned by them, and, whence, without further care, many may be selected in fit condition for the usual Michaelmas sacrifice. For birds to be killed later in the year, a well-ventilated out-house, or large pig's-stye, with plenty of clean water, oats, and barleymeal, will become requisite; but even this greater outlay is well compensated under judicious management. The choice of breeding-stock, dictated by our own experience, would fall on a Toulouse Gander, and large, dark-coloured Geese of the common breed; from such parents cross-bred birds will usually attain greater weight than either of the breeds by themselves, although to be rejected themselves as breeding-stock, and the objection to the Toulouse race, on account of their being indifferent sitters and mothers, is thereby obviated. If white plumage is desired, the "*Emden*" Goose should be taken; but we are at a loss for any point of recommendation in the "*China*" species that would place it above these for general purposes.

Ducks, we believe, are usually kept with less profit than Geese, being much more dependent on their owners for their food, and the comparative cost of production is, therefore, in excess of the latter birds. But where steamed food is daily prepared for our pigs and cattle, a portion of this, mixed with bran and barley-

meal, gives the best chance of seeing the outlay on these birds returned to us after their disposal; but where such facilities are wanting, and the run is at all confined, their voracious appetites, not to be satisfied with grass, like Geese, leave little, if any, room for profit on their expences. But a well-fed, early Duckling is undeniably deserving of its great popularity; and from their rapid growth, and ready sale early in the year, are worth attention where good markets are at hand to take off our surplus stock. For the supply of our own table, also, in the special cases for which our advice is now tendered, we may be content if the expences are met by the value of the bird when slaughtered, for rarely in the country, at least, can we purchase them as good as we can ourselves feed them. The Duck is a bird that should never be stinted in food; and from the time of its exit from its shell till the morning that dawns on its execution, its rations should be both regular and liberal. An exception to our remarks may be made in such districts as around Aylesbury and elsewhere, where Ducks are reared for the high prices of the London and other chief markets. If we are asked what breed is likely to prove the most profit-producing, our opinion may be stated very decidedly, for we feel satisfied that the "Rouen" birds are not merely the best layers, and equally hardy with the other varieties, but are, also, the best-flavoured; in point of size, also, these need fear no comparison with any other, the coarse Musk, or Brazilian Duck alone excepted; but with respect to this latter bird, all we can say is, have nothing to do with it, for they are very unproductive while living, and of very indifferent quality when placed on the table.

Turkeys must come next. On light, dry soils we may make them pay, but where this condition is wanting they will be found unprofitable stock. They require, also, a separate feeding place from our other fowls, and though Geese and Ducks may be excluded on such occasions without much difficulty, this is not so easily managed with Turkeys, and far more than their just proportion is too often gobbled up by them. They are delicate when young, and, except in very favourable localities, require more attention than can be profitably bestowed on them. On large farms, where a wide range of stubble will supply their food during several of the autumn months, their case is open to far more favourable considerations; but on small occupations, we are unwilling to believe that their profit usually exceeds their cost. The "Norfolk," or the "Cambridge" breeds would be those we should ourselves choose; the latter is a larger, and, as many think, a hardier bird.

As to *Guinea Fowls*, a few words may suffice for our present purpose, since narrow limits are altogether unsuitable for them, if we have any wish to profit by their produce, since hedgerows a quarter-of-a-mile off are quite as likely to contain their nests as any situation nearer their home. They are difficult to rear, and, though commanding a good price in spring, must be kept through summer, autumn, and winter.

Pigeons conclude our task. With the mere fancy varieties of these birds it is evident we have nothing to

do, since, however beautiful, economy is a merit that their warmest admirers cannot claim for them. But will the common dovecot Pigeons, either *Columba affinis* or *C. livia*, or, indeed, any of the other varieties that may be kept in a similar rough manner, supply our kitchens at a cost not exceeding the outlay? Now, this enquiry is one that would receive an affirmative answer, rather from our utter inability to form a correct estimate of the ravages committed by them on our own or our neighbours' fields, than from any trustworthy debtor or creditor account. Their pilferings are often serious, and, consequently, lead to disputes that would have been much better avoided; and if, to avert this inconvenience, we encourage them to remain at home by supplying all their wants, we are confident that the return would not cover the expenditure.

Fowls, Geese, Ducks, Turkeys, Guinea Fowls, and Pigeons, have now been gone through, with reference to the one point of economy. The opinions that have been given on each of them have been based on general grounds; for, doubtless, there are particular circumstances and conditions to which our observations would not so strictly apply, but these exceptional cases would extend too far the limits of the present paper. It is a singular consideration, however, that modern enterprise and discovery have added nothing to our list, for, Turkeys alone excepted, the poultry-keeper of times antecedent to the Christian era had as large a catalogue as we can now boast of; and, notwithstanding the continued endeavours of the London Zoological Society, the late Earl of Derby, and other public bodies, and private individuals, the Curassow, the Guan, and some few other birds, of which hopes were confidently entertained of their addition to our list, are as far as ever removed from the state of true domestication. W.

THE STRAWBERRY.

I VERILY thought, some years since, that there was little to learn concerning Strawberry culture; but I have found each succeeding year "add a wrinkle" in this, as, indeed, in most other gardening affairs. It somehow happens, in most sublunary matters, that the more we know in reality of any subject, the more acutely do we feel any deficiency that exists, or any desideratum supposed to be attainable. I suppose that this may not be traced alone to the progressive character inherent in all gardening subjects, but to an emulous and insatiable reaching after perfection, which feeling our gracious Creator has indelibly stamped on the human mind for most beneficent purposes. Were it not for this, indeed, we should soon be satiated with most things; and life would become like a stagnant pool, instead of the brisk and sparkling rivulet, the action of which never ceases. I do not think that there is a man living, worthy the name of horticulturist, who would be content, for the next score years, to eat the best Strawberries, Pears, Grapes, &c. that we now possess, were they ever so high flavoured and excellent, upon condition that improvement should not be attempted. Now, if this be correct, it at once points to the fact, that the profession in which we are engaged is one eminently of a progressive character; not only in the production of novelties, but in cultural advances; and those of our friends who may

have taken a fancy that the very acme of perfection has been attained in gardening, may at once reconsider their position, and still press forward; or, as one of our useful contributors has styled himself, let the cry, if they please, be "upwards and onwards."

When we cast a glance over the many plans which have been broached, through the medium of the gardening press, as to Strawberry-culture, we may readily perceive that the question separates into two broad divisions to begin with—the one, how to cultivate the noblest fruit fit for the exhibition-table—the other, how to obtain the most profit. It so happens, as I think, that these two phases of the question are sufficiently distinct to constitute, as it were, landmarks in the affair; and with a just conception of the points in which any given question hinges, we may hope, by a dispassionate handling, to arrive at tangible facts. About the permanency of the Strawberry, under a course of culture adapted to its continuance in a profitable shape, as a perennial, for a few years, there can be no doubt; there is, also, I conceive, little room to doubt, that with a peculiar course of culture, two, three, aye, four or five-year-old plants of certain kinds, on eligible sites, will prove more profitable than those grown by what is termed the runner-system. It is of no avail, that those who have sworn by the runner-system only, try to pooh down this perennial plan; we must try and introduce a little liberality of sentiment and feeling into this, as, indeed, into all other things.

I must now advert to what I will call the perennial-system, which is so seldom done justice to that I will point to a few facts in culture before I proceed further. I have now a plot or two of the *Keen's Seedling*, a kind not yet to be despised, that have borne most excellent crops for seven years; and I have no doubt will continue so to do for two, or three, or four years more. The berries, of course, are not quite so large as those grown from young plants under very particular culture, but of one thing I am persuaded, that I have heavier crops in the aggregate; and this, where people require a considerable quantity for preserving purposes, &c., is an important affair. But these have a kind of culture adapted to their habits and age. It is very common to hear complaints of old beds running all to leaf, and no wonder; they get to be a complete bush, and the whole of the interior is good for nothing; nay, a positive evil. In the first place, our superior Strawberries have no business in what are termed "beds." Persons possessing but a very small space of ground, and desirous of having a Strawberry plot, very naturally conclude that they must plant closer together than other folks; this conclusion, however, is most fallacious, as the least consideration will show. It is obvious, that the practice which is most productive and profitable in an acre is so on a single pole for the same reasons; indeed, how could it be otherwise? Such parties too often manure liberally, thinking they will have finer Strawberries, and hence, although they may, the first season or two, have a few swaggering berries, their plants speedily become choked, and, of course, unfruitful, and the owners wonder what is the matter. Now, the manure they use might not be too liberal for the single-row system, for the beneficial results of manurial matters are almost always in proportion to the amount of unobstructed light that the parts of a plant receive.

The *Keen's Seedlings* I adverted to were originally planted in rows, thirty-three inches apart, but with age they have approached somewhat closer. The plants were, at first, fourteen inches apart in the row, but after bearing one good crop, every other plant was cut clear away, thus leaving the permanent plants twenty-eight inches apart. The ground was deeply trenched, and a good deal of only half-decayed manurial matters

trenched down, whilst a dressing more decayed was worked in near the surface.

But I must come, now, to subsequent practice, which I consider of much importance. This consisted, after two crops, in an annual digging and manuring between the rows. I can fancy, now, that I see some of our cultivators, and who consider themselves perfectly orthodox in Strawberry culture, and who are, as they imagine, fortunate in differing from me, taking off their spectacles, and giving them an extra wipe, in order to ascertain whether they have read me aright. However, the glasses duly restored to their rightful sovereignty of the nasal organ, I will explain why I adopted this practice, seemingly in defiance of first principles connected with the habits of the Strawberry. It is pretty well known, I believe, that most perennial plants, when standing long in a soil, become somewhat exhausted, have a tendency to roam further in quest of that food which is requisite not only to continue them in health, but also to sustain the demands consequent on fruit or seed bearing. Such fibres are multiplied annually, not only collaterally, but upwards, at a higher level. Hence the rationale, in part, of surface-dressing to attain specific objects; and hence, although it may appear wide of our subject, the dressing of pasture lands with our farmers, the result of which is, another and higher series of fibres. So it appears that there are two ways of multiplying and feeding trees or vegetables, through the medium of excited fibres, multiplied almost at will: the one by the extremities of exciting roots coaxed into a feeding medium; and the other by creating, if the term may be pardonable, a host of new fibres at a higher level than before. I do hope that this circumlocution, if such it must be deemed, will be pardoned, for the sake of the point to which it is meant to tend, viz., the reasons why Strawberry plants fall in with these principles.

The Strawberry plants in rows, before alluded to, being, as stated, thirty-three inches apart between the rows, each row, of course, enjoys a space for the roots, sideways, of about sixteen inches; but with the annual root-culture, which I am about to describe, about one foot on each side only is filled with the undisturbed perennial roots, and the nine or ten inches in each centre between the rows is annually dug and cultivated; in other words, annually filled, by the month of May, with a new series of white fibres revelling in fresh compost. Here, then, is the pivot on which the mode of culture depends, in conjunction with a slight surface-dressing; and as I claim not for it a pre-eminence above other modes, by any means, so I, as certainly, claim for it a consideration, having succeeded right well with it for several years; and I do think that in thus showing forth various practices, that some service is rendered to horticulture, inasmuch as to the reflecting mind it tends to throw light on the habitudes and adaptabilities of plants under culture.

But I lay much stress on the period at which this annual digging is performed. I consider that one great object, in Strawberry culture, is to produce as strong and abundant a bloom as possible, with a subdued foliage. It is all very well to suppose that the greater the amount of leaf, the more copious the elaborating of the sap; but this, though involving facts of high import, may not settle this matter, there are other collateral points which have a tendency to alter the whole tone of the affair, but these considerations would lead me too far a-field.

Now, it is known that any operation of this kind should not be performed whilst the plant is in the full exercise of its functions; and, therefore, the dormant season offers the best chance for such a process. And, moreover, I consider it absolutely essential that the plants should be in possession of their new fibres by the

time their bloom is rising; and this, I find, is accomplished by giving them the culture here adverted to in the end of October. We first take a scythe, in order to save time, for labour is precious, and mow the top of all runners between rows: we then set a garden line, and chop out the digging line, which, as before described, is down each centre, "chopping out" on each side, and leaving a centre of about ten inches for the spade operation. The coarser part of the detached runners being raked off, manure or compost, in a rotten state, is shaken along the line from baskets, and the centres are then dug about eight inches in depth, the manure, of course, going to the bottom of the trench, or rather blending with the soil in the operation. It is almost needless to observe, that all the extreme ends of the fibres are cut away in this operation; indeed, such is the design—a root-pruning, call it. Now, frequent examinations have proved that the Strawberry may be thus excited collaterally as well as upwards, by surface-dressing; and I have to observe that the latter principle is combined with it, for in the month of April we apply a surface-dressing of half-decayed leaves, the rakings of the shrubbery, about three inches in thickness; and this induces a host of surface fibres, sustains a surface moisture, and assists in keeping the fruit clean. Thus have I proceeded annually with a certain plot, for several years, and I am not aware they have declined in produce.

The spring dressing consists in cutting all foliage away about the middle of March, or just before the young leaf sprouts; if they have commenced growth, much care must be taken not to destroy the new growth. At this dressing, all poor looking buds in the interior of the shoots are thinned away, and finally, the soil is drawn close to the crowns with an iron rake. I dress nothing away in the autumn but the runners, for, unquestionably, it is a serious injury to take away that clothing which is wisely destined to protect the crowns during severe weather. By this practice, it will be found that the foliage receives a check in point of spring exuberance, and more of the strength arising from the new fibres is thrown into the blossom truss; we cannot expect high flavour if the bloom is smothered with foliage. Those who want to grow large show-berries must not resort to this practice, the frequent runner-system has the advantage in this respect. I may also add, that I have not tried this mode with any but the *Keen's Seedling*; with that it was commenced as an experiment, and is now continued by choice; but I do not think it would be expedient to retain them more than six or seven years.

R. ERRINGTON.

BULBS.

(Continued from Vol. x., page 480.)

LYCORIS.

I PASSED over this genus in its proper place, and were it not that custom sanctions the practice of growing it in pots, I would not include it among the half-hardy bulbs; but when I saw my old plant of *Aurea* in the collection at Shrubland Park, last September, in a pot, and looking as well as usual, I determined to give it the same position as *Lxilorion*—the bulbs we have of both these genera being, to the best of my knowledge, quite hardy, but very scarce indeed in this country.

LYCORIS AUREA.

This is one of our oldest bulbs, the *Amaryllis aurea* of all our books, with the same habit as *Nerines*, to which section of the *Amaryllids* *Lycoris* properly belongs. When *aurea* is in leaf it is easily known from all other bulbs in cultivation, but it is not so easy to tell how that is. The leaves come from the bulb

"all in a bunch;" there are from eight to fourteen of them, all of the same size, from six to nine inches long, and scarcely half-an-inch wide, *linear*, as they say in botany, that means the leaf is not flat; if you lay one of them on its back on the table, the middle or centre line only will touch it; the two edges turn up a little, and that is a linear leaf; those of *aurea* are more uniformly milky-green than any of the same size known to us. It is a very gay flower, of a golden-yellow colour, and from six to fifteen flowers on one umbel, according to the age and size of the bulbs; the flowers spread out and stand upwards from the scape like those of *Nerine*, but without the segments waving or reflexing; the only drawback is that they come before the leaves, and generally in August or September; the bulb grows all the winter, and ought to go to rest before the end of May, but under the influence of heat and moisture it will often keep green from year to year, and then it never flowers. It likes very sandy soil, but not peat, and exactly the same treatment as the *Bella Donna Amaryllis*, only that it is more pliable in a pot.

LYCORIS STRAMINEA.

This is quite a new bulb, very nearly allied to *aurea*, and quite as handsome, but besides the straw-colour and a pink line along the midrib of the segments, there are botanical points of sufficient difference to separate the two as distinct species. They are both from the extreme east, China and Japan. Mr. Fortune sent over this species to the Horticultural Society in 1847.

LYCORIS RADIATA.

This, also, is a very old bulb in cultivation, but if not lost it must be very scarce indeed; the flowers are light crimson. Thirty years ago, every flower like this was called *Amaryllis*, and put into the stove as soon as they were introduced, and from that day to this, nine gardeners and nurserymen out of ten give too much heat to all their bulbs, and the consequence is, that they either do not flower them, or if they do, they lose them after a few years. I do not think, however, that any heat or bad treatment would kill *aurea*; for I have seen it under all sorts of names and bad treatment in my day.

ORNITHOGALUM.

The common *Star of Bethlehem*, in the flower-borders at Beaufort Castle, above Inverness, was the first bulb that I learned the name of, after the Onion, and the first *Ornithogalum*, and the last of them that I cultivated, and yet I know less of *Ornithogalums*, by name, than of any other family of bulbs. I have grown some very good ones of them, imported direct from the Cape, both white and yellow ones, but they were never very great favourites with me, and I did not study them so thoroughly, that I can feel confidence enough to make a selection of a few of the best that would please others; therefore, leaving the selecting from this numerous group to individual taste, I shall merely observe that the strong, large bulb of them, will grow in any good garden soil, but those little white bulbs, so much like Onions for pickling, which we often receive from the Cape, require very sandy loam, and well-drained pots, with a little white sand round the bulb. Peat is poison to this tribe of delicate bulbs, unless they are shaken out of it every rest season, to be preserved in dry sand while they are at rest. They are not so excitable as the *Ixias* to start late in the autumn, and it is more safe in the dry sand till February.

PENTLANDIA MINIATA.

There are three dark-looking bulbs from Cusco, and other parts of Peru, which, from the looks of their flowers, any gardener would pronounce to be *Stenomessons*, but there is a little want, in the inside of the

flower, in the rudimentary-cup, by which Dr. Herbert separates these from *Stenomesson*; but it seems a pity that a genus founded on the splitting of a hair should have been named after Mr. Pentland, to whom we are so much indebted for a knowledge of the vegetation of southern Peru. This genus is sure to lapse into *Stenomesson*, when such bulbs come more into cultivation, and are crossed. *Miniata*, *lucunosa*, and *Sullivanica*, are but three forms of one species. The flowers are beautiful orange and red, and are produced in four or six on an umbel, from early spring to July, first spreading out a little, and then hanging down; the bottom part of the flower is much contracted, as in *Stenomesson*. *Pentlandias* rest, or ought to rest, all the winter, and flower with the rise of the leaf after resting. Light sandy loam, free air, and abundance of water after the full growth of the leaves, and a partial shade, seem to suit them better than anything. All this race may be distinguished by their comparative shortness, and from the bottom and point of the leaves running narrower than the middle.

PEYROUSIA.

This is a genus of pretty little *Ixia*-like bulbs and flowers with the habit of *Anomatheca*, but with a much more tender constitution, all natives of the Cape of Good Hope; and, were it not that they are little known, I would have included them in the *Ixia* group of "Cape Bulbs," and would recommend them to be grown in very sandy loam—more than half sand, with any light loam; for, like the smaller *Lachenalias*, there is no such thing as keeping them alive in peat of any texture. *Corymbosa*, *anceps*, and *oculata*, are the best of them, and they are very pretty blue flowers; *oculata* is blue and yellow. Six or seven bulbs of each of these could be grown in a forty-eight size pot. They are very impatient of much water after the leaf is full grown, and if the soil, particularly peat, gets the least sodden while the plants are in flower the bulbs perish. They ought to be shaken out, and to be kept in sand when at rest. The late Mr. Young, nurseryman at Taunton, was the best grower of them in England, and I believe his secret was the loam instead of peat. The genus is spelled *Peyrousia*, and *Lapeyrousia*, after the French navigator; neither of which, however, is the legitimate one, for Sprengel had them first in his genus *Ovieda*.

PHLEDRANASSA.

This is, comparatively, a new genus, and the bulbs are all but new to gardeners, but they have been long known to science. Humboldt found *chloracra* in the neighbourhood of Quito, and mistook it for a *Hemantthus* (*H. dubius*, of Humb.), a genus to which it has no resemblance or affinity. In 1837, Dr. Herbert includes the plant, with some hesitation, among *Phycellas*, without seeing it alive. Mr. Hartweg sent it to the Horticultural Society, from the Highlands of Quito, and several gardeners flowered it in 1844, myself among the rest. I mistook it for a new *Coburgia*, perhaps *splendens*, of which I had seen a figure from a dried specimen; but a specimen sent to a meeting of the Society passing off for a *Phycella* (April, 1844), I gave up my chance of a new *Coburgia*. As soon as Dr. Herbert saw a live flower of *chloracra*, he saw it could not stand as a *Phycella*, and, botanically, it could not rank with any known genus, and he named it *Phledranassa* (*Botanical Register*, 1845), from two Greek words, meaning a Gay Queen, and I am quite sure that if ever this gay queen marries out of her own family it must be to one of the *Coburgs*, to which, however, she is first cousin already. There is not a drop of *Phycella* blood in her veins.

PHLEDRANASSA CHLORACRA.

This is a handsome flower—a strong, hardy constitu-

tioned bulb—throws up a scape of from 20 to 30 inches high, with an umbel of from eight to fourteen or fifteen flowers, some of which are past before the last one is seen in the bud, thus holding on a long time in flower. *Coburgia incarnata* gives a very good idea of this plant, only that the red in this flower is brighter than in any of the *Coburgs*; the tips of the flower are greenish, and also the bottom, but the middle part is a bright red, with a lighter shade. It goes to rest in August, or September, and flowers in the spring before the rise of the leaf. It blossomed with me once in September, but that was caused by a hard experiment. The bulb is a native of the same hills as some of the most difficult *Coburgias*, and I, mistaking it for a *Coburgia*, placed it on the sand, on a slate shelf, where I succeeded to flower some difficult bulbs. On this shelf it had only one inch of very sandy soil in depth, and when the roots obtained a full size the bulb was nearly all out of this soil. It was a very cool damp-kept house, with the front ventilators open day and night, except in hard frost, or very dull weather. Here the bulb, leaf, and flower came out in perfection, and the scape kept on flowering for seven weeks. In the spring, by the end of July, the leaves ripened; and in six weeks afterwards the bulb was again in flower, but not nearly so strong as in the spring; in fact, the stimulus of a constant moisture at the roots, when it ought to be at rest, caused the flowers that would come next March or April to rise in September. This and the next species are easily known by the leaf, which is short, broader in the middle, and very narrow at bottom.

For the right soil see the next species.

PHLEDRANASSA OBTUSA.

This is a much smaller plant in all the parts than *Chloracra*—a smaller bulb, leaf-scape, umbel, and individual flower, but the colours are nearly alike. The Horticultural Society had it from Mr. Hartweg, and it flowered in their garden in the autumn of 1844, when it passed as *Phycella obtusa*; but certainly not the *Phycella obtusifolia*, described, by Dr. Herbert, as a Chilean variety of *Phycella attenuata*. I have a drawing made from Bridge's specimen of the latter now before me, and I had Hartweg's plant, in flower, in my hand the other day, at Shrubland Park, so I can tell the difference without charging my memory. *Phycella chloracra* and *obtusa* must be cancelled from our Dictionary; they are these gay queens. A light sandy loam, such as would flower a Dutch Hyacinth, but with no peat or leaf-mould, and an upright thirty-two pot, will grow *chloracra* to perfection; and a pot of that size would flower three bulbs of *obtusa*. Like the *Coburgias*, these will endure great heat for a season or two, but either of two things must follow, as surely as night follows day, and that is, that *Coburgias* run to leaf-spawn, like Shallots, and never flower at all; and *Phledranassa* neither spawns, or increases the number or size of the leaves, but flowers weaker and weaker, every year, till the growth dwindles to death's door. *Obtusa*, flowering in the autumn without the leaves, is very liable to injury from too much water. Like the Guernsey Lily, people will water it long before it wants any, because the flower-scape is rising; and if the plant happens to be the least confined, the leaves are thus forced to rise before their time, and weaker than they ought; and then we go on to say, one generation after another, that such and such bulbs cannot be grown in our climate.

PLANTIA FLAVA.

This is a pretty little Cape of Good Hope bulb, which has been lately rescued from a host of *similarities*, which all go, at present, under the genus *Sisyrinchium*. It was named, by Dr. Herbert, in compliment to Mr. Plant, a zealous cross-breeder and nurseryman, at Chendale. I

have not seen this bulb yet, and cannot say if it is miffy to keep; few of the *Sisyrinchiums* are; but until the whole order of Irids is revised by an able hand, who can tell which is a *Sisyrinchium*, and which is not? *Plantia* will grow in any light compost; and, if it keeps to the family name, it ought to seed, and also multiply by offsets freely enough, under good management.

POLIANTHES, OR TUBEROSE.

The "*Sweet tuberosa*" is as well-known as the Tulip itself, and the ways to grow it we know not, or if we do, we do not practice it, and so we allow the Italians to grow them for us; we merely flower them. In the good old times of "*herbaceous plants*," they used to have patches of the *tuberosa* all along the borders, about four feet from the edging, with a stick in the middle of the patch to tie four or five of them to it; and once I saw a large bed of them in full bloom in the open air; they were potted, and gently forced in April, just like *Tigridias*; and in June they were planted out in the open ground; but now-a-days, we more often see them drawn up like ghosts, in too much heat and confinement, "to scent the rooms." The kind called *gracilis* is only a botanical plant, of which they take good care in herbariums, the only place it is fit for.

PHALOCALLIS PLUMBEEA.

This is an extraordinary-looking, gauky plant, a native of Mexico, and requiring the same treatment as *Tigridias*. It only produces one flower on the top of a very long rigid stalk; rather a large flower for the plant; a beautiful lead colour, with yellow and violet towards the bottom; but it only keeps open a few hours, and that early in the morning, therefore is of no great use as a garden plant. If it could be crossed with any of the allied plants to *Tigridia*, the peculiar colour of the flowers would come in useful.

RIGIDELLA FLAMMEA.

This is a tall-growing bulb from Mexico, whence it was introduced by the Horticultural Society. It is nearly related to *Tigridia*, but more slender and much taller in growth, and requires exactly the same treatment as the *Tigridias*, and flowers from June to September, in the open borders; and with a slight protection in winter, it will stand out-of-doors all the year round. The flowers are of a fiery-crimson, or flame-colour; they hang down on long peduncles, and do not open till towards the afternoon, and when open they are reflexed; the individual flower soon fades, but they come in long succession. As soon as the flower drops, the long, drooping footstalk, or peduncle, assumes a diametrically opposite position, and stands up as firm and stiff as can be, holding the seed-vessel to the full sun. It is from this peculiarity that the genus was named *Rigidella*, signifying, literally, stiff-stalk. The scarlet Geraniums have the opposite habit of showing the flower; they point to the sun, but when the flower drops, if the germen is fertilised, the peduncle droops immediately, and all the "beaks" point to the ground, until within thirty hours of the ripening of the seeds, when they begin to take to their first upright position, and by the end of that time they are stiff-stalks again, as much so as *Rigidellas*. Strong bulbs of this species, in a rich, light border, will throw up flower-stems upwards of four feet high. The bulbs are easily kept, and increase readily, and they are very desirable summer ornaments, when grown in masses, on a south border.

RIGIDELLA IMMACULATA.

This, the spotless-flowered stiff-stalk, differs very little from the preceding species. The flowers are a little smaller, but of the same flame-colour, and the plant is somewhat more dwarf, and the leaves narrower than in

flammea. It has been sent from Guatemala, by Mr. Hartweg, to the Horticultural Society. In a general way, it might be described thus—the Guatemala form of the plant is a little smaller, in all the parts, than the Mexican form (*flammea*), with the addition of a spotless flower. The two would certainly cross, if that would improve them; but looking at the two together, I see no opening for much improvement in them; but there are more kinds of them in Mexico, some of which may be likely enough to improve the breed. As it is, this one ought to be planted in front of *flammea*, on account of its being less of stature, and, also, because the flowers open early in the day, like those of the *Tigridia*, and begin to close by the time those of *flammea* are ready to open in the afternoon. In a pot, in-doors, this flowers much earlier than *flammea*; but give both the same chance in the open air, and they will bloom for nearly three months in the height of summer. D. BEATON.

(To be continued.)

VINERY AND PEACHERY GREENHOUSE.

"I AM about to construct a Greenhouse, heated by hot water, for plants, and a Vine up every other rafter, at the end of my parsonage, where there is already a Peach-tree growing. Would you have this removed, or allow it to remain?" "Cannot I have Peaches from a Vinery, the plants either planted out, or in tubs or large pots?" "Is it impossible in one house to keep bedding and greenhouse plants, and yet from it to obtain fair average crops of *Peaches* and *Grapes*?" "How long may I keep *Grapes* in a house in which I am obliged to keep many greenhouse plants after the end of September; and what is the best mode of doing so?"

These are a sample of the inquiries that have lately been made on these subjects. All of them, I rather think, have received less or more attention. I had prepared some notes, in answer to the latter inquiry, before reading the admirable article at page 58, to which I would direct the serious attention of everyone who wishes to preserve late *Grapes* in the winter months.

With the presence of plants that require much water, it is next to impossible to maintain that low temperature, and motion, and dryness in the air, on which Mr. Errington rightly lays such great stress. If only succulents, such as Cactus, or large plants of Scarlet Geraniums, in pots or boxes, were introduced, there would be no great difficulty, as each of them, by means of their stems, would absorb nearly as much moisture from the atmosphere as they would perspire. But, whenever much moisture is prevalent from watering many plants that cannot be kept dry, the atmosphere of the house becomes loaded with moisture; and if you light a sharpish fire, there is danger either of hastening the decomposition of the berry by heat, shrivelling it by strong draughts of air, or surrounding it with invisible vapours, next to saturation point. Hence, those who wish to make the most of their one house for plants and vines, should give no more heat in winter and spring than would allow their Vines to break only a few days before those in the open air; should remove out-of-doors, and under partial protection, all these hardier plants, by the middle of May, or rather the beginning of that month; should then, by keeping the house closer, though never without air at the back, and the use of fire-heat, raise the temperature to 65° at night, by the time the bunches were in bloom, and to from 75° and 85° at mid-day from sunshine; and then good *Grapes* may be had from the end of August to the end of October, with little or no trouble from damping; when the house may be prepared again for its winter residents. Those who, by that time, must have all their flowering plants housed, will act wisely in securing some of their best bunches in bladders,

or glazed muslin bags. I previously mentioned the case of an amateur, who, in a house crammed with plants, by means of the former of these mediums, kept Grapes in good order until after Christmas. Even with these coverings, as moisture repellents, it would be advisable to examine the Grapes now and then, to see there were no rotting or damping berries, as one would soon destroy the whole.

In relation to the first query, respecting preserving Peach-trees on the back wall of a greenhouse-vinery, the propriety of this will greatly depend upon the objects chiefly aimed at, and the arrangements of the interior of the house. Some years ago, advice was asked, under similar circumstances, in two or three cases; and in these, respectively, I have been informed what fine Peaches they have had. But, in two cases, though the house was a lean-to, facing the south, the stage was low, made as if to fit a hipped, or span roof; the tallest being in the middle, and then the others placed lower on the north and south side. The principal walk was between the Peach-covered north wall and the stage; and the north side of the stage was thus chiefly kept for plants in bloom, or requiring a little shade, while the south side was filled with those requiring full sunlight. In the other case, the stage sloped in the usual manner, but was so low at the back, that the rays of light struck the back wall to within a short distance of its base. The Vines at the distance from each other spoken of would not injuriously interfere with this. We have had good Peaches on a back-wall, with the Vines four and five feet apart. In the spring of the year, where artificial heat seldom exceeded 45°, with a rise of 10° or 15° from sunshine, the Peaches would be in bloom, and set, before a higher temperature was needed for the Grapes; and then, independently of the light passing between the Vines at all times, the curtailing of the laterals of the vines early in autumn, would allow more light to pass freely to consolidate the Peach-wood and perfect its buds. With a stage in the contemplated house so high as to shade the back wall, the first crop from wood ripened this autumn will be all that could be depended on; and after that, the sickly state of the trees from unripened wood would occasion more trouble and drawbacks than all their advantages. Used chiefly as a preservatory of plants, from the middle of October to the middle and end of April, and with a platform not so high as to shade the wall, and with a command of air at the top of the house, good Peaches may thus be obtained, and only inferior to those in a regular Peachery, where air and sunlight may be had at command when the sun shines. Where profit as well as pleasure is an object, I should be sorry to root out such trees from the back wall of such a house, as even if disliked, or a change wished for afterwards, they would yield you some returns, in the way of fruit, for a season or two, before the Vines came into bearing. A friend, who thought of thus enclosing a piece of wall, was doubtful of the Peach-tree sending hosts of fly among his Geraniums, &c., but the Peach is just as easily kept clean in-doors as a Geranium, as the temperature that suits the plants will just suit them before the fruit is set; and afterwards, they will quite enjoy either the temperature of a greenhouse or a cool vinery. In the latter case, if it be wished to keep the house as a whole, rather close, when the Grapes are swelling, a little air left on the top of the house constantly will be the best security for the health, and freedom from insects of the Peaches, and, I may add, of the Vines likewise.

The second question, then, as to having a combination of Vinery and Peachery has also been so far answered. There can be no question of its practicability when it is desirable, as in a small parsonage garden, to obtain much in a small space; or where

variety and quantity of an average useful character are deemed greater indispensable than fewer objects, but these of first-rate quality. No one with various houses at command would ever think of mingling the two as a system. Independently of other considerations, the simple fact that the Peach, in all its stages, will enjoy a temperature of from 5° to 10° lower than the Vine would rejoice in, should lead those having various houses to have a house for *one* thing. Besides, the two fruits require different treatment at very particular periods of their well-being. For instance, supposing that all has gone on well until the Peaches are approaching maturity, abundance of light, and plenty of fresh air, are the essentials for giving that fruit first-rate colour and flavour; but just at that time the Grapes will be swelling fast, and beginning to change colour; few sorts, indeed, would be perfected; and, therefore, the free admission of more air, and the removing of laterals freely, to give light to the Peaches, would so far check the swelling of the Grapes, that you would run the risk of having colour and good quality at the expense of size. When, therefore, the mingling method is attempted in places of some extent, a clear preponderance in the necessary treatment should be given to one over the other; for instance, I have just cut down two Muscadine Vines in an early Peach-house, some fifty feet long, ten feet wide, and the back wall as much above the front wall plate, the roof sloping, therefore at an angle about 45°. Trees are trained against the back wall, and on a low trellis in front, the back of that trellis being two-and-a-half feet above the front wall plate, and three-and-a-half feet from the back wall, so as to allow plenty of room for a pathway. At the back of the trellis there is a narrow shelf, another shelf is suspended overhead for Strawberries; and, about the middle of the roof, a single wire is stretched lengthwise, on which these Vines were trained; sometimes pruned on the spur system, and sometimes on the single rod system; and, in either case, producing heavy crops. Now, any one with his pencil, forming a right angled triangle, and supposing the hypothenuse line as the glass, through which the rays of light are to pass, will at once, according to the sun's altitude, see how far these shelves, when stored with pots and the Vines together, would obstruct the light from the back wall. It will be evident, that as the Peaches approached maturity, say in the end of May, the whole of the shelves could be cleared, and the suspended one removed altogether; but, of course, the Vine could not be touched. We were glad to put up with a partial shading of the lower part of the back wall at a time it required most light, because, not forcing a vinery early, we could get a fair supply of Grapes by the time the Peaches were getting thin. But as Grapes can *now* be obtained elsewhere as early as wanted, I have pretty well resolved to grub up these good old servants of Vines, that there may be no future hindrance to the full maturing of the wood and fruit to the bottom of the back wall. An amateur, observing these Grapes during the summer, was surprised that I did not have the *Sweet-water* instead of the *Muscadine*, as it ripened somewhat earlier. My objection to that fine fruit, in such a position, would be, that it requires fully 5° more heat to set it freely than the *Muscadine*. Even with the *Muscadine*, in such circumstances, a little scheming was not thrown away—such as fastening the rods very near the glass when the Peaches were started, where, consequently, they were kept cooler; suspending them about two feet from the glass when the young shoots were two or three inches long, and thus keeping them in a more equal temperature, and then raising them to within fifteen inches of the glass when the flowering was over. In such a case, where the Vines are a secondary object, the hardiest, such as *White Muscadine*, *Black Hamburgh*, and *Black Prince*,

should be used. In all cases where Peaches are, in addition to covering the back wall, planted out as standards, and cultivated in large pots, or tubs, with Vines on the rafters, success will chiefly depend upon making them so far the principal thing that the Vines shall not prevent plenty of light at all times reaching them.

The third enquiry, having reference to associating Vines, Peaches, and greenhouse and bedding-plants, may be said to be answered in the last remark; and in the statements in reply to the first query ament the contemplated house at the Parsonage. But here, to prevent, according to the old adage—"slipping down between two stools," it is necessary to make one a principal object, and the other only subsidiary. I once used a large house for a similar purpose. Standards of Peaches in the centre of the house bore plentifully, and fine, well-flavoured fruit; but, then, the roof of the house had Vines little thicker than on every alternate rafter. By degrees, it was found out that the Grapes were more valuable than the Peaches, and, consequently, the roof, by degrees, got covered with Vines. This soon told on the Standard Peaches. They first suffered in colour and flavour, and then began to yield imperfect blossoms, from not obtaining a sufficiency of light. After the standards in the centre of the house were thus crippled, those on the back wall continued for some time to produce fair fruit, just because there were more openings for the light to enter near the top of the roof; and what light entered at other places was reflected and refracted from the back wall, the plants there receiving the benefit. Of course, there will be no difficulty with greenhouse or bedding-plants if fire-heat is used merely to keep the house from frost.

Many, who now contemplate building, have ambition enough to try many things in little space. In the case before us, plants, in winter and spring, and fruit, in summer, seem the chief objects. I have endeavoured to hold the balance even—neither to damp the anxious, industrious, and intelligent, nor to make the zealous sanguine over-much.

R. FISH.

DROPMORE GARDENS.

THE progress of trees that are new, and likely to be useful or ornamental to our country, is always exceedingly interesting; and I never had this more forcibly impressed upon me than when I had occasion, lately, to visit DROPMORE, the residence of Lady Grenville, situated about three miles from the Maidenhead Station, on the Great Western Railway.

It is well-known as a place that contains a splendid collection of Coniferæ; and as I was much delighted with the progress of these fine trees, I took the notes which I now briefly transcribe for the readers of THE COTTAGE GARDENER.

It is greatly to the credit of the noble owner of these fine trees that the gardens may always be seen by respectable parties, on application to Mr. Frost, the intelligent gardener there. Any lady or gentleman wishing to ornament their grounds with these fine trees may there see what splendid objects they are, even when they attain the size they are at Dropmore; and Mr. Frost is no niggard in imparting information how to plant them, what sort of soil they require, and any other point likely to be useful to the planter. That he is a competent guide is certain, for he planted them, and has had the care of them up to this day.

On entering the grounds at the Lodge-gates, the visitor passes, for a short distance, through a plantation of lofty common forest-trees. The carriage-drive gracefully winds round, and the view opens upon a wide lawn, on each side of which appears fine healthy speci-

mens of the commoner Coniferæ, such as the Norway Spruce, the Weymouth Pine, and the Scotch Fir, acting as precursors to the more rare and finer specimens of the tribe. This lawn, or grassy ground, is not in what is called high keeping, but is considerably undulating, and, here and there, broken with pieces of rough ground, on which the common Heath, and other dwarf British shrubs, form a kind of foreground to the tall Conifers alluded to above, rendering the scene excessively picturesque. I think this drive, from the entrance gates to the mansion, must be nearly a mile in length. As it approaches the house, the woods again receive the visitor, and finally he arrives at the stables. There the gardener must be inquired for, and through a door in the garden wall the pleasure-ground is entered.

Against this wall there are several plant-houses, a lofty conservatory, and a beautiful aviary. In front of them is a large space laid out in the ancient style of flower-gardening, with here and there a mixture of the more modern bedding-out system. Passing through this, the visitor arrives at a large space of dressed lawn, on which are groups of trees, and amongst them, in open spaces, are the fine specimens of the Coniferous plants, occupying, I should think, at a rough guess, ten or fifteen acres. This pleasure-ground is to the right of the mansion, the front of which is, comparatively, clear of trees. The views from hence are very fine, embracing the Hill of Richmond, Ascot Heath, the Royal Castle of Windsor, and the Bedfordshire hills, fifty miles off. These are the general features of this fine seat. I shall now describe, as well as I can, the fine specimens of Coniferæ, and, first and foremost, as being the most remarkable,

Araucaria imbricata.—Of this beautiful tree there are three or four remarkably handsome specimens. As is well known, it is an evergreen, and emphatically so; for it is a fact, that the leaves on the trees at Dropmore are at least twenty years old. They are alive now, close to the stem, down to the ground. I know no other evergreen that keeps its leaves so long.

The finest tree stands on a knoll exposed to the west and north winds, and has not suffered in the least from the exposure, thus proving its perfect hardihood. It is thirty-eight feet high, clothed with branches down to the ground. The stem is four feet in circumference, and every tier of branches is perfect to the very top. It was planted when a small plant, exactly twenty-two years ago, and has, consequently, grown, on an average, rather more than eighteen inches every year. The subsoil on which it stands is gravelly, and the surface-soil not more than a foot deep of common, not over rich, soil. All this proves the *Araucaria imbricata* to be a very desirable tree to plant largely, in every situation not actually wet.

Cedrus deodora.—One planted in 1835 has attained thirty-five feet in height; very magnificent specimens; next in beauty to the *Araucaria*, and quite as hardy.

Pinus insignis.—This dark, rich green tree is a very quick grower. It was planted in 1839, and is now fifty feet in height, with wide-spreading branches.

Abies Douglassii.—A noble tree, seventy feet high, with a stem six-and-a-half feet diameter, and branches that cover a space of ground sixty feet in diameter. It was a seedling in 1828, just twenty-five years ago, and, consequently, averages an annual growth of nearly three feet. This is, undoubtedly, the finest tree of the kind in Europe.

A. carpatica.—Fifty feet high; a rare species.

Larix macrocarpa.—A deciduous species, with large cones; likely to become as valuable a timber tree as the common Larch.

Picea nobilis, *P. grandis*, and *P. amabilis*.—These being of late introduction, are, as yet, but small, but they are growing rapidly, making shoots nearly two feet

long every year. They are nearly all equal in height, namely, ten feet each, with branches down to the ground. As the seeds of these noble Silver Firs have been imported largely last year, the price will soon be more moderate.

Cryptomeria japonica.—Is here perfectly hardy, and has reached nearly thirty feet in height, and is producing cones plentifully, so that this useful tree will soon be as plentiful and cheap as the common Scotch Fir. The variety, *C. Lobbi*, of a more dense habit, is also producing cones. I might extend this list greatly, but the above is sufficient to prove how rich this place is in Coniferæ; and I must conclude this brief notice of this interesting place by observing, that I know no place so worthy of a visit, so full of interesting objects, as Dropmore.

T. APPLEY.

THE GLADIOLUS.

(Continued from page 81.)

CULTURE IN POTS.—There are few bulbs more worthy of culture in pots than are the new and finer varieties of the *Gladiolus*. They are useful to ornament the greenhouse in June, July, and August, when the usual inhabitants are enjoying the open air. Their spike-like forms diversify the stage, and their high-coloured flowers render the house gay for several weeks in succession.

The kinds best adapted for pot culture are *Augustus*, *Blandus*, *Cardinalis*, and its varieties. *Brenchleyensis*, *Bowiensis*, *Colwellii*, and its varieties. *Formosissimus*, *Insignis*, *Queen Victoria*, *Ramosus*, *Spectabilis*, *Trimaculatus*, and other hybrids of Cape species.

The soil for them in pots should consist of loam, sandy peat, and leaf-mould, in equal parts, with a small addition of some thoroughly-decomposed hotbed manure. These materials should have been well exposed, and frequently turned over, some months previously, to sweeten and pulverise them. They may be mixed at the time of potting, or sometime beforehand, as may be convenient. The smaller-growing kinds should be put into six-inch pots, three bulbs in a pot; the larger ones into eight-inch pots. Drain well, and fill the pots with the compost to within one-inch-and-a-half of the top; then put in the bulbs, and fill up to the rim, pressing and shaking the soil down upon them.

The time for this operation depends upon the time of flowering. The early bloomers, such as *Blandus* and *Trimaculatus*, should be potted in October; whilst the later-blooming varieties, such as *Ramosus*, may be put in as late as December; but this is a matter of convenience; they may all be successfully potted in November; and will answer equally well, only the early ones should be brought earlier into the greenhouse. As soon as they are potted, plunge them overhead in coal-ashes, or saw-dust, and place some covering over them to keep off the heavy rains and snows of winter. If very severe frost takes place, a shelter of fern or straw should be applied. The best place for them, however, would be a frame or cold pit, if such a convenience is at hand for them. They could be effectually protected from all adverse weather, only the lights should be drawn off every fine day, as they will not bear, or, at least, will not thrive so well, if too much, or any, heat is generated in the frame by the sun's rays. Under these shelters they may remain till the leaves appear, and the season advances, when they should have air night and day. The grand object to be aimed at is to keep them *slowly growing*, any attempt at forcing would, in nine cases out of ten, prevent them blooming satisfactorily. When they have made some growth, the pots should be lifted up out of the coal-ashes, and any that may be on the surface of the soil in the pots should be scraped off and the pots clean-washed; then, if they are in a frame,

re-set them in it, and carefully protect them from late frosts by coverings of mats, or some other sheltering material; if not in frames, then form a shelter with hoops over the bed for the same purpose. As soon as room can be made for them, place them on the greenhouse stage as near the glass as possible, so as to allow room for the leaves to attain their full size. As the flower-stems advance, lower the pots, and place neat sticks, painted green, to each flower-stem. These are to keep each flower upright, for without sticks they are liable to grow sideways, and then they interfere with other plants, as well as being unsightly. Due supplies of water must be administered; the quantities to be increased as the foliage and flower-stems progress. Just before the buds appear, a dose of weak manure-water will be useful, both to encourage growth and give a higher colour to the bloom.

In the greenhouse, the *Red Spider* is frequently troublesome to these and similar plants. I have frequently seen that splendid plant, the *Tritonia aurea*, with its leaves all turned yellow long before its fine blossoms were decayed, thus deteriorating its beauty greatly; and this is an allied plant to the *Gladioli*, and they suffer equally from this pest if it is not kept under. The best remedy is a free use of the syringe in the early stages of growth—thus acting upon the old proverb, that prevention is better than cure. After the bloom is over, the plants should be set out-of-doors, fully exposed to the sun, gradually reducing the supply of water; and, when the leaves are quite decayed, lay the pots on one side, behind a low hedge or wall, to induce a complete rest. Then, when it is convenient, turn them out of the pots, cleanse the bulbs of the tops and old roots, and place them in drawers, with their names attached, until the planting or potting season arrives again.

It is advisable, where possible, to use fresh roots for potting every year, because the bulbs never attain that size in pots that they do in the beds, and for the simple yet certain reason, that in pots there is not sufficient soil to give nutriment enough to the foliage to cause the bulbs to attain their full size. But where there are no beds to plant them in the succeeding year, then choose the finest bulbs, and repot them for flowering, and pot the smaller ones to grow on the next year without flowering, till they become of sufficient size for that purpose.

T. APPLEY.

(To be continued.)

MUSHROOMS ON BEDS OUT-OF-DOORS.

ALTHOUGH a building heated by fire applied by the aid of flues or circulating hot water commands a more certain crop, yet Mushrooms are often produced without the use of such an auxiliary; and as many amateurs and others, who may be wishful to have this luxury, may not be in possession of such a building, the means whereby they may be obtained in other places, will, no doubt, be interesting to all who have not hitherto tried the homely shifts to which we allude, and which are within reach of everyone who is possessed of a sufficient quantity of horse dung, and a place to pile it on; but before entering on the process of making such beds, let us glance at the "Mushroom," as it presents itself in a wild state out-of-doors, and see if any analogy exists between its production there, and in the artificial beds we on many occasions have made for it.

On very fine autumns Mushrooms continue to grow until a very late period. Some few years ago, many provincial papers recorded the fact of Mushrooms being gathered as late as Christmas in their various localities, even in the northern counties. Now, from this we may

learn, that atmospheric heat alone is not the sole agent wanted to secure a crop; a little attention to the state of things will disclose the fact, that when Mushrooms are thus produced to a late period in the season, the ground will be found containing a greater amount of heat than is common in other years; for instance, let us suppose the mean heat of the ground to be 51° for September and October, in the generality of seasons, and this to gradually decline as the autumn advances, until it reach some point, say 48° , at which the Mushroom will not grow. Then, again, let us take a remarkable fine autumn, wherein the ground temperature is maintained until a later period in the year, the natural impression would be, that Mushrooms would continue to be produced until the decline did fall so low as no longer to allow them the necessary warmth to subsist on. This occurs, in ordinary seasons, about the middle or end of October, in the south of England; in the north before that time; and in fine seasons it continues longer, as in the instance above-mentioned.

Now all these facts indicate that the Mushroom, though not requiring all the heat of our summers, yet a greater amount is necessary than our autumns usually present; and we have reason to believe, that were our summer evenings longer, and accompanied by those refreshing dews so congenial to the Mushroom, they might be had in greater abundance at that period than as they now are; but with a dry, parched-up atmosphere for some fourteen or fifteen hours out of the twenty-four, it is no wonder that a production so little indebted to sunshine should refuse to flourish under such conditions; otherwise, the Mushroom is not so partial to heat as many other productions; in fact, its being found in the north of England, in a wild state, quite as plentiful as it is anywhere in the south of it, indicates the preference it gives to a damp and cool climate to a dry and heated one. This peculiarity is not to be wondered at when we look at the singular family to which it is related, some of whom are annihilated by exposure to sunshine.

It is not necessary to pursue this subject further. I have explained why out-door beds are often very successful; and I will now observe, for the information of those not versed in such matters, that the best Mushrooms ought to be of a dark drab or pale brown colour outside, and not too white. The inside ought to be pale pink and fresh-coloured, and in substance it ought to be "fleshy," with a thick substantial stalk. Now then, these qualities are not sufficiently explained to enable a stranger to distinguish the true from the improper Mushroom, for there is a kind grows exceedingly large, with a smooth white back and pale interior, which is often gathered and presented as Mushrooms, and not unfrequently specimens as large as a dinner-plate are found, and reported in the local press as natural curiosities. This kind usually grows under trees or behind hedges, but it is also found in the open field; but I would particularly request all persons to be careful in using them; for without affirming them to be decidedly poisonous, they certainly are not wholesome; and as they are often produced in tufts of some half-dozen or so together, they are easily known from the genuine sort. However, I have never seen anything like them amongst the produce of an artificial bed.

In the making of a bed out-of-doors, it is necessary to have a larger body of heating material than where a bed is made in some warm house or corner. The dung, also, ought to be not too much exhausted in the process of turning and preparing, for it ought to have a lively heat in it at starting, otherwise it would not endure the test of a long season of hard duty. Nevertheless, it ought to be so far tempered as to prevent its overheating; a portion of the straw or litter may also be retained in it, to keep the body from becoming too

much consolidated. When all is ready, and a suitable site fixed for the bed—which site, by-the-by, ought to be as much sheltered as possible, if it be by nothing better than by a deciduous tree, for even this often imparts a degree of dryness to the ground which it would not have without it—on such a place mark out a bed of any length you choose, and begin its bottom four feet wide. The shortness of the material used will prevent a bed being carried up with perpendicular sides; this, however, is immaterial, for it is not wanted, only be sure in the making up to tread or beat it well, in order to confine the heating material in such a way as to ensure its continuing so for a prolonged period; for, be it remembered, that hot dung, by being trod very firmly, rarely ever heats to excess. In the course of making up the bed, beat the sides as well as the top; so that when finished it ought to have the appearance of a "high pitched roof." This done, let it remain a few days to see how it acts, and if it does neither overheat, nor refuse to heat at all, then spawn it at once, and coat it over with soil of a rather stiff kind, which (to lie on the whole surface of such a "roof-like" bed) ought to be rather wet than dry. Some growers apply it in the shape and consistency of mortar, but that is not necessary if the soil can only be made to lie on. It is then only necessary to cover the bed with nice dry litter, and over that some water-proof covering ought also to be added over the litter, as it is requisite to keep that as dry as possible in order to promote the heat of the bed.

As most water-proof coverings of a portable and pliable kind are expensive, I have often used, as a makeshift, with very good result, hurdles thatched with straw. These, if carefully done, will turn off much rain; and the under-covering being sufficient to exclude frosty winds, as well as retain the internal warmth of the bed, more costly coverings may be dispensed with. An occasional examination must be given it for a time, to see if all goes on aright, and in due time, we have no doubt but Mushrooms, in abundance, will be forthcoming, provided the bed has been made of good materials, and the spawn used has been good and fresh.

The spawning, we need hardly observe, ought to be performed by inserting pieces of prepared spawn (or that from an old bed), of the size of an orange (or less will do) all over the bed, at distances of not more than six or eight inches apart, and deep enough to be covered a couple of inches or so. A good beating afterwards will efface all marks made in the operation. Water is but seldom wanted for an out-door bed in winter, but towards spring it may be necessary, and should then be given freely when it is applied.

It may be observed, that when the shelter of an out-house can be obtained the result is likely to be more satisfactory, as by that means the chilling effects of cold rains are obviated, and other difficulties removed; and there are many such places vacant, any of which will serve the purpose. When a structure is put up on purpose, then, by all means, introduce fire-heat, for, after all, it imparts a degree of certainty to the crop which the greatest care can hardly ensure out-of-doors.

J. ROBSON.

CULTIVATION OF RAPE.

RAPE, otherwise Coleseed, is one of the most nutritious of vegetable productions usually appropriated as food for sheep stock, and is, at the same time, very productive when judiciously cultivated upon land best suited to its growth. It cannot, however, be compared with Swedes or Turnips in the weight of produce per acre, but upon many soils, not so congenial to the growth

of bulbous roots, a crop of Rape will often exceed in the acreable amount of nutrition that to be obtained from a crop of the different varieties of common Turnips.

There are two varieties of Rape, the tall or long-legged, and the dwarf; the former is now nearly gone out of use, chiefly because the crop is now usually cultivated and hoed, similar to a crop of Turnips, and when treated in this way the tall variety would become so very strong in the stalk, that a large portion of the crop would not be consumed by the sheep, but would be left on the land, and prove an impediment in the after-cultivation for succeeding crops; whereas, the latter, when sown upon land in a good state, and well manured, will, when thus managed, produce a most abundant crop, having very large and branching heads of greens upon a short stalk, which the sheep will eat nearly close to the ground, if consumed at the proper period.

The tall or long-legged sort, is best cultivated by broadcast sowing, when the greatest amount of food is required to be produced in the shortest time, and which is the object when late sown. It grows rapidly, and being thickly planted on the ground the crop will push up very high, yet the stalks will be neither large nor strong, and will be almost as readily eaten by sheep as the leaf itself; it will also retain the leaf, and continue its growth for a longer period than the dwarf variety; for it is well known that the great objection to a broadcast crop of the latter is its tendency to drop the leaf, and die away very suddenly, either in very dry weather, or from the effect of early frosts. The dwarf disposition of the plant precluding its growth upwards, it soon becomes stunted, and as soon as the leaves begin to fall the value of the crop is rapidly depreciated.

The above observations represent my own experience as to the value of each variety, and although I greatly prefer the tall kind for late sowing, yet I often find it difficult to obtain the seed, as farmers, in general, give the preference to the dwarf.

The soil best adapted for the production of Rape is peat or moss land, but nearly every kind of soil will produce abundant crops if well cultivated and manured. It is not usual, however, to confine it (except in case of failure of root crops) to peat, high chalk, or strong clay soils, chiefly on account of its peculiar capability for fitting and preparing the land for the succeeding Wheat crop.

The preparation of the land is not so important an operation as it is in Turnip-culture; for, provided it be clean, and free from couch-grass and root-weeds, it need not be more than once ploughed, but it should be rolled and harrowed until a perfectly fine surface be obtained previously to sowing the seed. The manure most suitable for the crop is Peruvian guano, sown broadcast, at the rate of two cwt. per acre, applied after the plough, and harrowed in, and two cwt. per acre of super-phosphate of lime should be applied with the drill, for the purpose of accelerating the growth of the infant plant, and pushing it forward out of the reach of the fly and other enemies. In case the seed is sown broadcast, the whole

application should be made of guano at the rate of three cwt. per acre. I consider guano the best manure which can be used for the growth of Rape; for, unlike the Turnip-crop, which will not bear the application of strong ammoniacal manures without producing a superabundance of leaf, yet, in the culture of this crop, it is all-important, an abundance of luxuriant foliage constituting its chief value.

The time for sowing must depend, in a great measure, upon the period the crop may be required for use—any time from the month of April to the month of August may be selected. The quantity of seed, when drilled, should be about three pounds per acre; when sown broadcast, four pounds per acre will be none too much, because its enemies have more power over a broadcast than a drilled crop. The distance between the rows in drilling should be arranged in accordance with the requirements and state of the land; eighteen inches is, however, the best distance, unless the land is foul and requires the constant use of the horse-hoe, when two feet will prove the best width between the rows.

Hand-hoeing the crop is not so important as in the case of Turnips, as it does not require so much nicety and regularity in singling out the plants; yet sufficient care should always be taken to cut up and destroy all weeds found amongst the crop; it should, also, be borne in mind that the harrows or drags ought to be used across the drills previous to the hand-hoeing, which will not only destroy weeds and assist the growth of the crop, but will enable the hoers to single the plants with more dispatch and greater regularity.

It is often the case, when Rape is sown early, that after the sheep have eaten the crop, a second foliage will spring out of the remaining stalks, and produce a large quantity of food as a second crop, if allowed to remain a sufficient time; it is, however, never relished by the sheep like the first crop; and I would sooner plough shallow, and sow again as fast as the land is cleared, provided there is sufficient time to mature the crop previously to sowing Wheat or other grain, for it will be found that the crop obtained in this way is much more valuable and more palatable to the sheep than the produce of sprouts from the old stalks. Rape is often succeeded by Mustard, or Rape and Mustard mixed, as a second crop for feeding; and it must be admitted that Mustard feeds well in admixture, and is much safer food for poor and lean sheep than Rape alone. This crop being the most nutritious and forcing of all summer green crops, renders it the more dangerous, and often proves fatal to sheep, in considerable numbers, unless great precaution and care is used in the mode of feeding and folding the sheep. The animals ought never to be allowed to get too hungry previously to being admitted to daily allowance; and I find the safest plan is to drive the stock back a little distance, about twenty minutes after they have been admitted to fresh food, and not allow them to return to it until the expiration of half-an-hour: the sheep do not become blown when managed in this way.

JOSEPH BLUNDELL.

TACSONIA CULTURE.

ONE of our correspondents, who signs himself "*Climber*," planted two kinds of Tacsonias in a cool conservatory, last July twelvemonths; the kinds were *pinnatistipula* and *mollissima*. The borders and the management were of the best throughout, from that day to this, and he reports that "they have grown exceedingly well, and have covered five rafters, up and down, and back again" (as they go through a country dance), "forty or fifty feet of the span-roof, besides running along the wall-plates, and ridge-piece of the house." The *mollissima* flowered since last May, till early in October. What a beautiful, free, and early-flowering plant this *mollissima* is when they give it room enough! Only ten months after planting it comes into bloom, and holds on in flower for five months next season after planting. I have been as lucky myself at flowering all kinds of Passion-flowers and Tacsonias as most people, but I never saw or heard of any of the race doing better than that. *Pinnatistipula* has not flowered yet with this reader of THE COTTAGE GARDENER, and he has *manicata*, the best of them, in a warm conservatory; in other conditions, it is "exactly like the others," but no flowers yet.

I once heard of a *Tacsonia pinnatistipula* that grew like a hop for seven long years, without showing a single flower-bud, and were it not for my own pen, I verily believe *pinnatistipula* would have gone out of cultivation some years since. There is one cause which hinders it from flowering early that few are aware of; and there is another cause against it which anybody can overcome the first season. The first plant of it that flowered in this country, in 1829 or 1830, was in a very cool, lofty house, in the garden of Mrs. Marryatte, at Wimbledon. This plant seeded as freely as the purple Granadilla (*Passiflora edulis*). I have seen it so at the time, and there being such a demand for it, the nurserymen took to seedlings, from this very plant, for some years, till the country was full of it; but, of course, no body could flower the seedling plants till they came to a flowering age like other plants. That was the first cause against it, and the second grew out of it after this fashion. Nine-tenths of the gardeners, and half the botanists believe, or once did believe, that the Passion-flower tribe require great heat, because they are able to withstand more heat with less injury than any other plants. So more heat was applied to the seedling climbers than they liked, and instead of flowering in three or four years from the pod, many of them did not flower much to this day.

I forget whether it was in 1829 or 1830 that the figure of the first Tacsonia was published, but I ordered a plant of it the same week it appeared in print, and from that day, till I left Shrubland Park, I never ceased growing it, and I never knew it to fail all the time. Until the appearance of *manicata*, I always thought *pinnatistipula* the best half-hardy climber of the Passion-works, and now I like it better than *mollissima*. I have grown it, also, from the first day it appeared; *manicata* escaped me till it flowered. I believe I had some seeds of it from Mr. Hartweg's lot to the Horticultural Society, but they did not vegetate.

I have already said, that as soon as I saw *manicata*, I got a morsel of it, and in seven months that was twenty feet long, and in flower-bud, so that if I did not know how to grow a cabbage, I ought to know as much about Tacsonias as any one; and now I shall answer our friend "*Climber*," after stating his difficulty—one instance out of many.

He says, "Now these three plants (Tacsonias) have quite filled-up the spaces allotted to them, and hence arises the difficulty which I shall beg you to solve." On the subject of pruning them he is doubtful, "as he

knows some Tacsonias are impatient of the knife." Now I confess to having used this phrase, "*impatient of the knife*," scores of times, but here I am in a fix with it, and I shall never use it again without explaining the meaning I intend it to convey. When you put a rose, or a violet, or a fig, or a cherry, under glass, and keep the place rather close, you create an artificial climate—or if you give more ventilation, and get the extra heat from fire, it is just the same; the rose, violet, &c., under perpetual excitement, are impatient of the knife; the more you prune them, the more they will not flower or fruit; but out in the open garden you may cut and prune at these plants almost at random, yet they will flower and fruit. It is exactly the same with these Tacsonias. There are not three other plants in existence at which you can cut away so freely, and which will flower more freely the following summer, or for so long a period as them; but keep them only a few years in a temperature a few degrees higher than they luxuriate in on the heights of Peru, and you disarrange their functions, as the doctors say, and then they cease flowering, or their flowers are not much worth when they do come.

Mr. Hartweg told me himself that none of the Tacsonias grow in the same climate as the Passion-flowers; but in a belt of country much higher up on the side of the hills, and that the summer is not so hot there, nor nearly so oppressive, as a hot summer in England. The coldest greenhouse in England must, therefore, be considerably more hot, and very much less airy or windy than is natural to these beautiful plants in summer; and all they want in winter, *after they have done flowering*, is merely to keep the frost from them, and not even that, a frost of five or six degrees does them no harm whatever after they are pruned. I once had long shoots of *pinnatistipula* in bloom in the open air during three weeks of frost, and one morning the night thermometer stood at 22°, when I came out thinking to find the shoots dead. A few hours afterwards, a drizzling rain came on, which probably saved the plant, as, if a bright sunny day followed such a morning, the plant must have stood a bad chance. The exact degree of heat which suits them best may not be easily found out, but my own experience says, that to get them early into bloom, say by the end of May, they ought to be gently forced, from the 1st of April, in a temperature of from 45° at night, to 55° of artificial heat during the day; but more heat delays the flowering. If the doors and windows of a forcing-house are open, and the sun raises the heat to 80° or 90°, we never call that forcing in April or May. As soon as the flowers begin to open freely, let all the air be given that the ventilators will let through; and as soon after that as the "*bedding plants*" in the flower-garden are just established, and looking as if no more cold would hurt them, the whole glass should be taken off the Tacsonias, or else they should be taken out of the house, by removing some parts of the sashes, and trained on the outside till after the middle of September. In short, to leave the glass over Tacsonias during the whole summer is nearly as bad as confining Roses under glass during the same months. I have acted on that belief since 1834, and never missed a good crop of flowers from them during the time.

When *mollissima* came out, I planted one of it against a conservatory wall, at Shrubland Park, and a fellow to it in the coolest part of the conservatory the same day. The one against the wall, in the open air, was in flower a whole month before the one in the conservatory, and yet the latter was twenty feet longer than the one out-of-doors. There never was a better opportunity of testing an experiment than this. Both these plants are still in the same places; but neither of them can have the proper and more natural treatment. The one against

the wall gets no encouragement at the end of the spring, but the contrary, and it is August ere it comes into bloom; and in October, when it is about in prime, the glass is put on the wall for the winter, and the sashes turn on hinges, to give open air to one-half of them to-day and to the other half to-morrow, so that this *Tacsonia*, or, at least, the half of it, is exposed every day that it does not actually freeze, and the November fogs soon settle the flowers for the season.

The conservatory there is kept too hot for any of the *Tacsonias*, yet *mollissima* was flowering there, along with *Ipomœa Learii*, better than the rest of the climbers; but, then, see what a cold, dull, cheerless summer we have had; yet, cold as it was, there is no comparison between *mollissima* out and *mollissima* in-doors there, and so it is with the other two.

Now, having established a case, and after what I have written on the same subject for the last fifteen years, if any reader of our works will choose to plant another *Tacsonia* in a warm house, or in a cool house, without a provision for letting out the top for a few summer months occasionally, to keep it healthy and in a flowering mood, I say, any one who runs his head against so much warning, ought never to see a flower on his *Tacsonias* as long as he lives. The *manicata* in the "warm conservatory" of our correspondent "*Climber*," will never do much good there as long as he lives. Better be one of Job's comforters, and tell the truth at once, than reply with all the sophistries that some people will write merely to please for the passing moment. If he could take out a square of glass—the *top square* of a front sash—opposite his plant, and take out as much of the branches as reach up to the opening, then train them right and left, and downwards, between the front sashes, I promise him that at least in two years he will have the finest and best flowering plant of it in the country, *providing* he attends to the following rules for pruning and for managing the plant between this and the middle of next May. If the border is not quite dry now, give it no more water till the middle of January; if it is very dry, give it a good watering, and keep the surface loose all the winter. Anytime about the beginning of December, choose a day that you can give up entirely for the pruning and arranging of this one climber; meantime, mix up as much patience and foresight as will last out the day, and begin by untying the whole of the plant, and bring it down to the path, if there is room, spread it out the whole length, and begin to cut the lowest young wood first, cutting below the last eye of each shoot; when you come to where the plant can be taken out of the house, leave as many of the main, or longest, shoots uncut as you think you can find room to train on the outside front of the conservatory; two shoots to train right and left, at the top of the front glass, and three more to train down between the sashes, would be a good beginning; these principals leave their full length, and every shoot which grows from them cut in quite close; there is an eye where every such shoot grows from that will make a fresh shoot next summer, and these fresh shoots are those that will flower. When all is done, your plant from the roots to the extremities of the main leaders ought to be as bare as a fishing-rod. You need not spare the old leaves on the parts you cut shoots from, but all the leaves beyond that may be left on all the winter, unless they turn yellow, then fasten up the plant again, and so leave it to the middle of next May, by that time every eye on the plant ought to start, but if the place is too warm, after the end of March the eyes along the highest parts only will push; keeping the plant rather dry at the roots, through the spring, however, will check them, and allow more time for the lower eyes to push also; if they do not push, and you see those at the top growing freely—say, during April, up with the ladder and stop

every one of these fresh starts back to the last eye next to the main leaders, and also nip off the extreme points of the leaders themselves, still keeping the plants on short commons at the roots. What for want of stimulus at the roots, and this universal stop to the young branch, the rest of the eyes all over the plant must surely come forth; still, if the top parts appear to rob the lower parts, stop the robbers a second time, before the first of May; and then by the middle of May, as I have just said, every bud all over the bare shoots, or, at any rate, as many of them as you can find room for, by-and-by will be in motion; then, and not till then, you may water at the roots to your heart's content.

Now we come to the grand secret, and your success will depend on your own courage, and on your faith in my tale; if you do as I say, you will succeed as sure as fate—if not, some one else will, and win the prize after all. You see we have now a great length of soft wood charged to the full with your hearty watering, and every eye on it is in full leaf, or shoot; and sure enough, if all this is to go on and prosper for the next two or three months, you will be in greater "difficulty" than you were last year—a regular fix, in fact; so I must out with the grand secret, and say, that all the roots of this *manicata* must be represented by the figures 1, 2, and 3; now uncover them, and with what remains of the mixture of patience and forethought divide their *bulk*—not their number—into three equal portions, and cut off No. 3 portion very close to where they first grew from the collar. The leaves and young growth will now be so much checked, that in a month or five weeks flower-buds will appear; but, of course, that depends on circumstances, such as a wet or a dry time, a cold or a hot period, from the middle of May to Midsummer, for I left it to be supposed that the top of the plant is outside the house before the roots are cut. The check by turning out the plant, and the training differently, coming at the same time, with a sudden check at the roots, will only be one powerful one, and the next free growth brings on blossoms. If the plant cannot be let out, two-thirds of the roots ought to go at this stage; in either case, an annual pruning like this must be made to keep these plants in balance. If the roots were cut now, or any time between this and next May, that would defeat the plan entirely; it is founded on a principle that will never alter. The enormous quantity that is—or rather that must be—pruned off these plants every year of their life, renders it necessary that every eye should start next season. Roots increase like the branches, and they, too, must be kept back, so as to balance with the heads; but if they are cut before all the eyes for that season are in growth, the one-half of such eyes will not start at all, and naked blanks, robbers, and weak shoots, alternately, will soon tell the tale. If ever you see an old plant of one of these *Tacsonias* out of bloom in August or September, depend upon it that is not their fault, for of all plants they flower most freely under right management.

D. BEATON.

GREY SHANGHAES.

W. C. G. cannot be in earnest with the piece of knight errantry he has indulged in, as the propositions are too unfair to allow of any conclusion. I may as well pick out two turnips and send you as a sample of a whole field of them, as for W. C. G. to send you as many chickens to prove the qualities of the whole Grey variety. The other proposition is infinitely worse; for, as I never kept these Greys, and as Mr. Stainton scattered his to the four winds long ago, if I had no other occupation for my time than to go on a pilgrimage in quest of the best specimens, to settle a question in which I am not interested to the value of their carriage to and from you, yet, it is so improbable that their owners would lend me the birds for such a mission, when I

found them, that I could not accept this challenge, particularly as the difficulty yet remained in reserve, to prove the negative, that the original stock did *not* emanate from America, which would be a heavy responsibility; no doubt, all these circumstances were very judiciously weighed by W. C. G. before he displayed his valiancy, but it does not assist his cause by proposing anything so unreasonable.

But all jesting aside; as W. C. G. has so many of these Greys (like each correspondent, indeed, who has put on armour in their cause) and feels such an interest in establishing their reputation as to induce him to throw down the glove as their champion, I am disposed to break a lance with him in favour of the Buffs. Will W. C. G., therefore, kindly state on what terms he will undertake to show the best Grey pullet he can produce, for all properties, except colour, against the best one I can produce of some other shade. This will be meeting the question more fairly; and, as the tendrils of W. C. G.'s affections appear to entwine round his calumniated, but cherished Greys, with a grasp rendered the firmer by the aspersions thrown on them, he, of course, will rush to the rescue with an enthusiasm equal to the cause.

But I am not intending to enter the lists to tilt for a gift to a charitable institution; though, I trust, this will not be deemed an obstacle. My heart, I fear, does not swell with the same amount of benevolence as W. C. G.'s, and if it did, circumstances dictate my charity should begin at home; but I can assure him, in case he loses, the money shall be devoted to no other than a good purpose.

I wish to remind you, that when I first entered on this disputed matter, I stated these Brahma Poutras were Grey Shanghaes, and not of American origin; and, instead of being just imported, had been long known here; and that the Grey colour was produced as true from one Buff, or other coloured parent, as from two Greys; all of which remaining disproved, swept away the strongest claims urged for imposing a fictitious value upon them. I have since said, they were not larger, nor better—in fact, not so good, as our Buffs; therefore, will W. C. G. now, or will any one else, say explicitly, in what their *superiority* consists. I long to be informed of this, so that I might admit I am in error, if I am really so; and many of your readers will be equally glad to know *why* they are more desirable. I remember, someone bewailed my depraved taste in not allowing the Grey's plumage to be the most beautiful; and, I confess, while a choice remains to me, I shall prefer the pure white; but what are their other good qualities?

I never had any of these fowls myself, though I might have had, had I so wished; and, therefore, I was not in the least interested about them, until I noticed an attempt to hoodwink your readers by erroneous statements of their merits, when I thought it time to send you the result of my experience, which is not of that infantine date suggested by W. C. G., whose fowls, by the way, I *have* seen, and, consequently, did include them in my criticism. It was I who first directed Mrs. Hosier Williams's attention to Dr. Bennett's work on American Poultry, the perusal of which led to the importation of the first pair of Greys into this country by that lady. Before ordering these birds, she sent me the book for my opinion on it, and naming several varieties which she proposed to send for; but, as the engravings would have disgraced a child's penny primer, and the matter was exceedingly vague, I did not like to offer one; but these Greys were selected, as the lady felt anxious to introduce what she supposed would be new to this country. They came, and the result your readers have been made acquainted with, and speaks volumes on the merits of the new and much-vaunted breed. They were exhibited at Birmingham—escaped notice—and were afterwards bought in at an auction at a nominal price, while Turner's half-bred 10s. Greys received the prize, and afterwards were sold to that eminent judge of poultry, Mr. Bond, of Leeds. It is not often such results ooze out from those who write to defend these Americans; but since it has, how little has W. C. G. to say upon it.

Your readers are aware that many breeds of fowls have very distinctive characteristics. The Malay, White-faced Spanish, Polish, Sebright Bantam, &c., are all well-known by some distinguishing feature readily apparent to the eye of any breeder of ordinary sagacity and experience in such matters, even when these breeds are blended together. I

mention this, by way of preface to stating, that those Grey Shanghaes which have long unfeathered legs, long tails, hawk heads, and knobbed combs, are only half-bred Malays, and many of such are called Brahma Poutras. Now, as the Grey is only a variety of the true Shanghae, any departure, in this variety, from the adopted well-known type of the pure Shanghae, should bear the bar sinister in their escutcheon as so many bastards, and judges of the Malay breed will say as much. I could mention one of the best authorities on Shanghaes, who told me he had bred birds identical with many of these so-called Brahmas from a Shanghae and a splashed Malay hen; and others have bred very similar ones from a Shanghae cock and a speckled Dorking.

If your correspondents will wrestle with actual facts, and state in what the superior merit of this breed consists, so that your readers may be made acquainted with it, they will be serving their own cause much more effectually than hitherto.

If agreeable to you, you will please publish my name, so that at least some of your readers may know whether I am capable of forming an opinion on the subject, particularly as matters have assumed the position they have at present.—C. H. BROWN, *Knip's Cottage*.

COTTAGE BREWING.

(Continued from page 88.)

PROCEED to fill the copper. Some prefer a hard, others a soft water for brewing with; I never could perceive any difference, although a preference in favour of soft water appears reasonable. Allow plenty of moistened small coal (slack) to be near at hand, use as much of this as possible for economy's sake; some stout, dry wood would also be found convenient to arouse the fire into extra activity, as occasion may require.

Next in order, and during the time the water takes to boil, we will consider about the mash-tub: It should be adjusted, raised on a tram about fourteen inches from the floor, and near to the copper as may be, for the purpose of allowing the hot water to be laded conveniently into it during the process of mashing; arrange the fauset and strainer, these require great nicety in placing. The latter, in our case, we will suppose made with wicker work; envelope a thin cloth around it, and this will ensure a double certainty for the wort running off fine. It must be made to lie horizontally even for the end of the fauset, with its mouth pressing close against the inside of the tub, and retained in this position when in the act of driving the fauset from the outside, through the aid of a piece of cord, permanently attached, by both ends being entered through the bottom, conveyed from thence through its mouth, and then united by a knot; this will allow a stout stick to pass between, as a medium of pressure outwards for the left hand, the lower end of the stick meeting with a resisting force from the left foot, while the fauset is driven with a mallet, by the right hand, firmly into the tub. The strainer is thus kept immovable by the fauset pressing the strings against the parallel sides of the hole; screw the spigot in the fauset, and place the malt, and the mash stick, or stirrer, convenient for the mash-tub. Thus far prepared, and the water boiling—be quite sure that the water does boil before you begin to mash, in short, it *must* before you do so. The old fashioned way of proving the water for the mash, is to cool it down till its surface, unobstructed by steam, resembles a mirror, wherein another resemblance to one's own physiognomy can be distinctively beheld; or when, by dashing through it one's finger, the water feels intensely hot without scalding. I have long since placed these rules upon the shelf, as I never could bring myself with confidence to trust them. When, by a thermometer, the proper heat the water should be turned on to the malt can be proved, to a degree, for certainty, do not jeopardise the brewing by trusting to those expedients of our great grandfathers, wherein differences according to the state of the weather of 20° or 30°, cannot be depended upon. A thermometer will cost, say 3s. 6d. as a happy medium; they can be purchased at any ironmongers; inquire for a *brewing thermometer*; drive a nail to suspend it by near the copper, within arm's reach,

and out of harm's way; do not reverse or jar it violently, as in these cases the mercury is liable to become separated.

The hole to admit the fauset in the mash tub will probably be bored an inch or two from its bottom, pour some water from the copper till level with it, and allow this to be reckoned as waste, for it cannot very readily be run from the tub in the shape of wort, unless a means of tilting is adopted; very large mash-tubs have their strainers situated at the bottom. Agreeable to the first supposition, you are about to brew 50 gals. of beer, and intend to allow 4 bushels of malt for the quantity; 94 gals. of water will be required, thus: I consider 1 gal. to wet each bushel of malt, and 21 gals. for evaporation in boiling as waste; 94, less 16, less 21, leaves 57 gals. over 50, which will be required to fill up the cask in its working process. Pour 16 gals. more water from the copper into the mash tub, on account of the malt (easily accomplished and measured by one of the pails which hold 4½ gals.); and quickly damp the fire by shovelling in at the furnace door some moistened slack; then add a few gallons of cold to the hot water in the copper, plunge the thermometer into it for a few seconds, take it out and observe the mercury, if this indicates more than 170°, it is too hot; add more cold water, until lowered to the desired heat. If you are not particular in this you will probably scald the malt, and spoil the brewing; though, should the weather be very cold, 4 to 6 degrees more heat will not signify.

Water, 94 gals.; 16 gals. are already in the tub, the remaining 78, divided by 2, gives 39 gals. for each mash; ascertain the temperature of the water in the mash-tub, which will by this time be about right, and shoot one-third of the malt into it; measure 20 gals. more water from the copper, stir it thoroughly with the mash stick, and be careful not to disturb the strainer, then add the remaining malt, with the exception of about half a bucket, measure the other 19 gals. of water to the tub, stir as at first, and spread evenly over its surface the malt reserved. Our forefathers were wont to form two marks diagonally across with their forefinger, and to form the impress of a figure of six in each angle, allowing, for a pretext, that no witch could ever leap over the aggregate No. 24 and the cross! But the days of leaping witches being over, this last operation may be dispensed with. Place a broomstick astride the top of the tub, and cover it over with the malt sacks; thus suspended, they do not fall into the mash and get wetted, if they do, the maltster will tell you of it; place the large cooler under the fauset, look at the clock, and the first mash is completed.

Again fill the copper with water, and at the expiration of three hours place the lading bucket under the fauset, unscrew the spigot to about one-third of its bore, and allow the wort to escape gently; return it into the mash-tub till you perceive it run off clear, which it should do after emitting two or three gallons; then let it escape into the cooler, and secure the spigot from becoming forced out of its place by means of a little wooden wedge. The time occupied for running off the wort should be about an hour, after which screw home the spigot again.

The water boiling, damp the fire, ascertain the temperature, which, for the second mash, should be 180°; measure 20 gals., then 19 gals. of water into the mash-tub, stir well, lay over the sacks, look at the clock, and allow the mash to remain three hours as before.

Now immediately shift the wort from the cooler to the copper, and add the hops, separating them between your hand as you do so, incorporate them well with the wort by stirring and sifting with the mash stick, and do not interfere again till the beer begins to boil, which, if you keep a good fire, it may possibly do in three-quarters of an hour. Watch it narrowly, for if, through negligence, it should boil over at this stage, ere you are aware of it, it will be all out of the copper in no time before you can possibly stop it; so soon as the hops heave and break, and foam appears through the fissures, look at the clock. It must now claim your undivided attention about an hour; allow it to boil freely for that time, coaxing it within bounds with the mash stick, though if it persist in boiling too violently, set the furnace door ajar for a few minutes; after the first hour it will naturally of itself boil more gently, and then cast into it a handful of salt.

Begin to run off the wort at its proper time as before. Keep the beer gently simmering, and occasionally stir it with the mash stick till its expiration of two-and-a-half-

hours is fulfilled; then make up a foundation for the fire by introducing some of the stout wood with a portion of nobbly coal, and over all some moistened slack; place the large brewing tub near the copper, suspend the brewing ladder upon it, and on that the sieve; laze the beer from the copper into the latter, where the hops will be retained; this done, immediately put some wort from the cooler into the copper to prevent its burning. Move off the strained beer to a cool place (my plan is to carry it to the cellar and empty it into a cooler), in so doing be careful; bear in mind we are brewing, after a manner, by measure; and as a further caution, I mention the results of my two last brewings, the quantity each time 150 gals. In the first, I had 6 gals. of beer over and to spare; for the next, one quart; therefore, if I had negligently upset any in the last brewing, I should have been at a nonplus. Separate five to six gallons of the hot beer into a small tub to cool ready for fermentation, and by this time the wort will again have all run off, put it into the copper, and return the hops there also from the sieve.

During the time it takes to boil, we will, with one eye of our mind resting upon it, soliloquise with the other about small beer, and come to an understanding for the grains. Between seven and eight hours' immersion in hot water have very nearly, if not quite, extracted the saccharine qualities from the malt; another mash would turn the wort grains sour, consequently, the liquid that would run from them might be termed anything but sweet-wort; and in lieu of its ever becoming a palatable beverage, would, after all the time and labour bestowed upon it, remain unwholesome; a capital stimulant for bowel complaints, or cholera, more especially for a small family. In large establishments, where they brew very strong ale, and have a great call for quick consumption, the case may be different. I have several times tried this third mash system in a small way, and invariably found it bad economy; therefore, instead of using five bushels of malt to the 50 gals. (unless for a cask reserved for grand occasions), I substitute four bushels, and make purposed brewings for table beer, allowing at those times the reserved bushel of malt to chime in extra as a condolence. Having thus unburthened my mind, I will bring this small subject to a close by stating what difference I allow for its process in contradistinction to ale. Table beer (50 gals.), three bushels of malt and two pounds of hops; first mash, three; second mash, two hours; boilings, two hours each; and here let it be observed, 12 gals. of water will be the waste for the malt, and the evaporation for four hours boiling, in lieu of five, will practically, and by a rule of three sum, be as 21 to 16 nearly; therefore, instead of 94 gals. of water required for the ale brewing, use 85 only; give the same quantity of barn, and allow eight to ten degrees excess of heat for working; small beer requires more stimulating to bring on and keep up the fermentation.

Grains; these should be conveyed to the hog cistern, or become otherwise disposed of. Perhaps the "pony" and the cow might relish a feed. At any rate, the mash-tub is to become the working tub, and if the grains are allowed to remain there longer than necessary, they will turn it sour, which must be guarded against; away with them. Take out the fauset, &c., close the hole with a large cork, scrub and scald the tub, and roll it into the cellar to cool; let the fauset and strainer undergo the same course, and when they are dry, place them orderly away for the next brewing. Well, another hour, and the boiling beer may again partly be supposed to take care of itself. It is now early morning, when the discussion of a rasher of bacon and a mug of hot tea, let me hint, would be found a capital invention, highly invigorating, and foudring for the inner man fresh spirit to carry out his operations manfully and cheerfully. —

UPWARDS AND ONWARDS.

(To be continued.)

AIR AS A NON-CONDUCTOR OF HEAT.

MR. FISH, in his article, printed at p. 42, states correctly, that confined air is one of the best non-conductors of heat; in some circumstances, a still better non-conductor will be found in air allowed to circulate freely between two objects. Thus, in the case of the evaporating pan placed on the hot

pipe, had there been no red lead used to confine the thin stratum of air, there would have been still less heat conducted, and, consequently, less evaporation, because the confined air gradually became heated, while, if it had been free to circulate, it would have been continually changing, the warm air ascending, and being replaced by colder. It is quite possible to make both air and water, so to speak, red hot. I have seen a hot-water two-inch pipe, hundreds of feet distant from the furnace, burn a hole in a bale of goods allowed to rest on it for a minute or two; and some of your readers may have witnessed a piece of lead melted, or wood charred, by a jet of air from the hot blast-pipe in an iron-foundry, one of the most useful discoveries of late years. On the other hand, in the case of a double-glazed frame, unless the interstratum of air is confined, the double glazing will answer no purpose, because the air, by continually changing, would carry off heat along with it, much the same as if there were only one glazing, and this would be the case whether it communicated with the outside or inside of the frame. In cases, therefore, where it is wished to prevent the communication of heat from one object to another, as when a pot or tub stands on a flue in the floor of a greenhouse, let it be raised on supports an inch or two, but do not confine the air between the bottom of the pot and the flue; but in cases where the radiation of heat is to be avoided, by all means let the interstratum of air be confined. Again, in ventilating a greenhouse by one chimney in the roof, without admitting air below, there will be comparatively little change of atmosphere in the house; but let a vertical diaphragm be introduced into the chimney, dividing it into two semicircular tubes, instantaneously a column of heated air will rush up one side, and of cold down the other, so that a thermometer placed on each side of the division, on a frosty night, will show a difference of perhaps 30° of temperature. Now it ought to be remembered, that the cold air will fall to the floor of the house in a stream, almost like so much water, the colder it is the more directly and compactly it will descend, and then woe to the unfortunate exotic standing below. The above explains the frequent drafts of cold air in a heated hail, even where all admission to air from the outside is carefully prevented, some unfortunate old gentleman's bald pate meets with the same fate as the greenhouse exotic.—W.D.A.

WATSONIAS.

BEING desirous of distributing to my patrons and friends bulbous roots correctly named, and answering to some arranged and definite description, I am sorry to say I am at a loss to know how to do so, for, to my great annoyance, I do not find two writers on the subject to agree in describing them. You very generously put forward, in your continuation of the list of bulbs published in the September number, a description of the varieties of *Watsonia*, which does not in any way tally with the varieties cultivated under the same names by me. I, therefore, forward you the enclosed list of them, which, after careful examination of the flowers, and comparison with the drawings and descriptions published, I have adopted, under the impression it is correct, but should be most happy to be corrected in any errors I may have made.

Watsonia brevifolia.—So named from the short, stiff habit of the foliage, the leaves being seldom more than a foot long. The flower-spikes are two feet and over, and the colour of the flowers of a dun-red.

Watsonia fulgida or *splendens* (*Antholiza fulgida* of some).—This is a really beautiful plant, the flower-spikes averaging from 3 ft. to 5 ft. in height, and branching; the flowers of a bright orange-scarlet. I find it thrives all the better for not being transplanted too often, the newly transplanted roots seldom acquiring sufficient strength to throw up good flower-spikes the first season. It is an ever-growing plant, forming young shoots at all seasons of the year.

Watsonia humilis.—The variety I have cultivated under this name was very similar to *brevifolia*, as was also a variety named *Aetroides*, neither of which do I consider worthy of cultivation, but for variety's sake.

Watsonia marginata.—I cannot discover any difference

between this and *Meriana*, excepting the strength of the foliage, which is sometimes margined with brown.

Watsonia Meriana is of a very strong habit, and seems to care but little for ill usage; flowering under most disadvantageous circumstances; the colour of the bloom is a dull brick-red. It is the commonest of all the varieties, and increases very freely.

Watsonia pyramidalis, or *spicata*.—This is a very pretty variety; the flower-spikes from 3 ft. to 4 ft. high, perfectly erect, with the lateral branches adhering closely to the main spike; the flowers are smaller than those of other varieties, but the deficiency in size is made up by their numbers, the length of bloom often exceeding two feet; the flowers are of a pale rosy-lilac.

Watsonia rosea, or *rosea alba*.—The flowers of this variety are larger in size and more beautiful in colour than those of any of the other varieties; the spikes of bloom are not quite so strong as those of *fulgida*, but the flowers are more expanded, and of a most beautiful pale rosy-purple colour. I have sometimes seen the three under petals marked with white; but it seems to me to be a sport, as it is not general.

I have also obtained varieties under the names of *coccinea* and *purpurea*, but have not yet bloomed them. I fear, however, I shall find, from what I have seen of the roots and the growth of them, that their plausible names have been too great a recommendation for them to me.

I find all the varieties to thrive well in an open, rich, sandy loam, and the beds cannot be better prepared than according to your directions given in a late number of this publication—that is, by digging the rotted manure used ten or twelve inches under the surface, which I find to be a good standing rule in the cultivation of Cape bulbs generally, and for the same reason as you so generously inform your readers—that is, that they do not require the nourishment the manure affords them until the swelling of the bulbs takes place in the latter stages of their growth. They require to be planted three or four inches deep, on raised beds; and I generally allow the beds to remain two or three years undisturbed, finding them to be perfectly hardy, and the roots to come out finer through it when taken up. I plant from August to October, depending on circumstances, never keeping the roots longer out of the ground than I am obliged to.

I am very anxious that the cultivation of these beautiful tribes of bulbous-rooted plants should be more generally understood. We grow them to great advantage in these islands, where the moisture is very great during the autumnal and winter months, with occasional frosts in early spring. The moisture I consider to be almost as detrimental to their growth as moderate frost, inasmuch as the constant rain during the winter months keeps the ground in such a soddened state, that, unless the ground was carefully drained, there would be no counteracting the influences of the lightest frosts; as it is, the foliage of the more tender genera, when excited to early growth, is often cut down close to the ground, which disfigures the plant, but does not affect the blooming much.

I think, with care, they might be cultivated in most gardens in England and Ireland, situated in dry, healthy localities; and their pretty and varied styles of growth, connected with the beautiful colours of their flowers, should be unanswerable arguments in their favour.—CHARLES B. SAUNDERS, *Casarean Nursery, Jersey*.

GAPES IN POULTRY.

PRAY allow me a small space in the correspondents' corner of THE COTTAGE GARDENER for a word of explanation; as I fear that my remarks respecting *Gapes* may be misconstrued. While many persons have sought for worms by the turpentine feather, without finding them, though the birds were killed by the operation (and no wonder, when the disease, in many cases, was acute inflammation), and others, I doubt not, have mistaken shreds of the recently formed false membrane for worms, yet I feel it would be discourteous to a zealous investigator, like Mr. Tegetmeier, to doubt that he has really dislodged worms from the larynx, or the

windpipe of fowls. Parasites, we know, occupy extraordinary localities in different creatures, and will not exist in any other part of the body, such as the gums, the palate, &c. of fishes, and, doubtless, they are so placed for wise purposes, and their presence is quite compatible with, (yea, perhaps necessary to) health. So these worms might exist in the windpipe of fowls (and Dr. Ranking tells me he has found them in pheasants, though not the cause of death), at the time that the disease, of which Gapes is a symptom, might occur.

What I really wish to see is a fowl that has died of Gapes, when, on dissection, these worms are found, and no disease in the windpipe, or lungs, to account for death; and I should be greatly obliged, for the inquiry is an interesting one, for such a fowl being sent to me.

"Gapes in chickens is caused by peculiar parasitic worms adhering to the inside of the windpipe," are the words of Mr. Tegetmeier, in his little work. Coming from so high an authority, I considered the error threefold dangerous, and this is the only reason why I have alluded especially to himself. That worms are, at the most, but an exceptionable cause, I am wholly satisfied. That the disease, or rather the symptom, of Gapes, is really dependant on inflammation of the lining of the windpipe, dissection in the cases I have seen convinces me. The further testimony of Dr. Ranking, who has again obligingly sent me some more cases that he investigated, and proposes the word *Trachitis* (inflammation of the windpipe) as the proper name of the disease, also establishes it; and the unsuccessful attempts of others to extract worms from fowls affected with Gapes, is so far, at least, corroborative. But "deeds, not words," will be my only guidance in the future consideration of this subject; it must be settled by *examples*, not by argument.—J. R. HORNER.

REIGATE POULTRY SHOW.

THIS took place on the 1st and 2nd of November. Upon what possible ground can confining its exhibitors to residents in the counties of Kent, Surrey, and Sussex, be defended? It was a very good show, on the whole. The Dorkings, Geese, and Turkeys, were very excellent.

Class 1.—SPANISH. Cock and two Hens of any age.

1. First prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. 2. Second prize, George Larmer, Reigate.

Class 2.—SPANISH. Cock and two Pullets, Chickens of 1853.

1. First prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. Age, six-and-a-half months. 10. Second prize, Charles Alloway, Dorking. Age, five months.

Class 3.—DORKING.—SINGLE-COMBED. Cock and two Hens of any age.

8. First prize, Rev. James Boys, Biddenden, Kent. 9. Second prize, Rev. James Boys, Biddenden, Kent. Age, six-and-a-half months.

Class 4.—DORKING.—SINGLE-COMBED. Cock and two Pullets, Chickens of 1853.

8. First prize, Rev. James Boys, Biddenden, Kent. Age, six-and-a-half months. 2. Second prize, The Rev. John Herbert, Leigh. Age, cock, nine months, pullets, five months.

Class 5.—DORKING.—DOUBLE OR ROSE-COMBED. Cock and two Hens of any age.

1. First prize, Robert Clutton, Hartwood, Reigate. 4. Second prize, Samuel Bothwell, Dorking.

Class 6.—DORKING.—DOUBLE OR ROSE-COMBED. Cock and two Pullets, Chickens of 1853.

2. First prize, Rev. James Boys, Biddenden, Kent. Age, cock, six months, pullets, five-and-a-half months. 7. Second prize, Henry Holman, Hurstperpoint, Sussex. Age, six-and-a-half months.

Class 7.—DORKING.—WHITE. Cock and two Hens of any age.

3. First prize, James Giles, Betchworth. Age, two years. 2. Second prize, Mrs. Wythes, Great Doods, Reigate. Age, four months.

Class 8.—DORKING.—WHITE. Cock and two Pullets, Chickens of 1853.

6. First prize, Mrs. Elizabeth Foreman, Pippbrook House, Dorking. Age, four months. 12. Second prize, Richard Godman Kirkpatrick, Betchworth House.

Class 9.—COCHIN-CHINA.—LIGHT. Cock and two Hens of any age.

2. First prize, Elizabeth George, Chaldon Rookery, Coudon. 3. Second prize, The Right Hon. The Earl of Cottenham, Tandridge, Surrey. Age, various.

Class 10.—COCHIN-CHINA.—LIGHT. Cock and two Pullets, Chickens of 1853.

4. First prize, John Eason, Montpellier House, South Lambeth. Age,

nine-and-a-half months. 17. Second prize, Captain William Henry Snell, Shirley Cottage, Norwood. Age, cock, eight months, pullets, seven-and-a-half months.

Class 11.—COCHIN-CHINA.—DARK. Cock and two Hens of any age.

2. Second prize, Thomas Bridges, Croydon. Age, various. 6. Second prize, George Carter Morrison, Reigate. Age, eighteen months.

Class 12.—COCHIN-CHINA.—DARK. Cock and two Pullets, Chickens of 1853.

2. First prize, Thomas Rider, Boughton Place, Staplehurst. Age, eight months and one week. 9. Second prize, Hon. Mrs. Scott, Thorpe, Surrey. Age, seven-and-a-half months.

Class 13.—COCHIN-CHINA.—WHITE. Cock and two Hens, of any age.

1. Second prize, Edward Norton Harper, Elmshade, Reigate. White. Age, second year.

Class 14.—COCHIN-CHINA.—WHITE. Cock and two Pullets, Chickens of 1853.

1. First prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. Age, six-and-a-half months. 5. Second prize, John Baker, Horley. Age, four months.

Class 15.—GAME FOWL. Cock and two Hens, of any age.

2. First prize, Robert Clutton, Hartwood, Reigate. Black-breasted red. 7. Second prize, Samuel Ridley, junior, Clayton, Hurstperpoint, Sussex. White and pile.

Class 16.—GAME FOWL. Cock and two Pullets, Chickens of 1853.

7. First prize, Samuel Akehurst, Copthorn. 11. Second prize, William Relf, Reigate. Age, five months.

Class 17.—GOLDEN-PENCILLED HAMBURGH. Cock and two Hens, of any age.

2. First prize, James Fisher, Reigate. Aged.

Class 18.—GOLDEN-PENCILLED HAMBURGH. Cock and two Pullets, Chickens of 1853.

4. First prize, James Underwood, Merstham. Age, three-and-a-half months. 6. Second prize, George Larmer, Reigate. Age, four months.

Class 19.—GOLDEN-SPANGLED HAMBURGH. Cock and two Hens, of any age.

1. First prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames.

Class 20.—GOLDEN-SPANGLED HAMBURGH. Cock and two Pullets, Chickens of 1853.

1. First prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. Age, six-and-a-half months. 3. Second prize, Henry Taylor, Godalming. Age, five months.

Class 21.—SILVER-PENCILLED HAMBURGH. Cock and two Hens of any age.

6. First prize, Albert Way, Wotton Manor, Betchworth. 5. Second prize, George Gibson Richardson, junior, Garlands, Redhill.

Class 22.—SILVER-PENCILLED HAMBURGH. Cock and two Pullets, Chickens of 1853.

5. First prize, Albert Way, Wotton Manor, Betchworth. 3. Second prize, George Gibson Richardson, junior, Garlands, Redhill.

Class 23.—SILVER-SPANGLED HAMBURGH. Cock and two Hens of any age.

3. First prize, Mrs. Austin, Kippington, Sevenoaks. 2. Second prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames.

Class 24.—SILVER-SPANGLED HAMBURGH. Cock and two Pullets, Chickens of 1853.

9. First prize, James Fisher, Reigate. Age, six months. 1. Second prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. Age, six-and-a-half months.

Class 25.—POLAND FOWL. Cock and two Hens of any age.

2. First prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. Silver. 4. Second prize, James Ivery, Reigate. Black with white crests.

Class 26.—POLAND FOWL. Cock and two Pullets, Chickens of 1853.

8. First prize, James Ivery, Reigate. Black with white Crests. Age, five months and three weeks. 7. Second prize, James Ivery, Reigate. Black with white crests. Age, five months and three weeks.

Class 27.—FOR ANY OTHER DISTINCT BREED. Cock and two Hens of any age.

3. First prize, R. Warren, Cottager, Leigh. Sussex Fowls. 1. Second prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. Algerine Silk Fowls.

Class 27.*—FOR ANY OTHER DISTINCT BREED. Cock and two Pullets, Chickens of 1853.

3. First prize, James Giles, Betchworth. Friesland.

Class 28.—FOR THE BEST CROSS BETWEEN ANY BREED. Cock and two Hens of any age.

1. Second prize, Charles Charman Elgar, Reigate. Cochins and Dorking.

Class 29.—FOR THE BEST CROSS BETWEEN ANY BREED. Cock and two Pullets of any age.

6. First prize, James Ormiston, Shabden, Chipstead. Cochins and Dorking. 4. Second prize, James Fisher, Reigate. Cochins and Dorking. 22. Second prize, The Rev. F. P. Roupell, Walton-on-the-Hill. Cochins and Spanish. Age, one year.

Class 30.—BANTAMS. Cock and two Hens.

3. First prize, Henry Edward Hampden Turner, Leigh Place, Godstone. Black. 6. First prize, Cassteel Cooper, Guildford. Gold-faced Sebright. 7. First prize, Cassteel Cooper, Guildford. Silver-faced Sebright. 9. First prize, William Hackblock, Reigate Hill. White Cochin-China. 13. First prize, Samuel Ridley, junior, Clayton, Hurstpierpoint. White. 20. Second prize, Col. Goulburn, Betchworth. Gold-faced.

Class 31.—GEESSE. Gander and two Geese, hatched in 1853.

1. First prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. 2. Second prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. Toulouse.

Class 32.—DUCKS. Drake and two Ducks, Aylesbury, Rouen, or any other variety.

1. First prize, Christopher Rawson, Esq., The Hurst, Walton-on-Thames. Aylesbury. 11. First prize, Robert Clutton, Hartwood, Reigate. Black Labrador. 18. First prize, Thomas Price, St. Leonard's-on-Sea. Rouen. Age, six months. 7. Second prize, William Dray, Farningham, Kent. Rouen. 9. Second prize, Mrs. Elizabeth Forman, Pippbrook House, Dorking. Muscovy. 21. Second prize, James Ormiston, Shalden, Chippingstead. Aylesbury.

Class 33.—TURKEYS. Turkey Cock and two Hens.

2. First prize, Albert Way, Wonham Manor, Betchworth. Black. 5. Second prize, James Giles, Betchworth. White.

Class 34.—GUINEA FOWLS. For the best Pair.

4. First prize, Charles Charman Elgar, Reigate. 3. Second prize, Charles Charman Elgar, Reigate.

SHOULD POULTRY BE EXHIBITED IN PAIRS?

I FIND many of my poultry friends averse to the plan now generally adopted of showing two and three hens with a cock; they consider that an exhibitor who is in a position to show four good birds, could certainly select and exhibit his best pair, so that such an exhibitor would not be excluded, while one possessing only two birds of superior excellence, would, by such modification of the conditions, be enabled to show them. They, moreover, consider that extra cost of baskets and conveyance would be saved, and that when at the shows, the birds, from being fewer together, and having more space, would be less liable to disease. It appears to me, what is wanted at a show, is the greatest excellence and not the greatest number; a pair of birds being sufficient to perpetuate any good qualities they may possess. I must confess I cannot see the necessity for exhibiting more in one pen, and to go still further, I like the exhibition of single male birds; they are of the utmost importance, and at spring shows it is very convenient to be allowed to purchase a single stock-bird without encumbering yourself with a number of hens, probably of the same blood as the cock; a deal of in-and-in breeding would be avoided. I well know the trouble that was occasioned to the officials at Birmingham when the division of pens was allowed; but I am sure amateurs were better able to improve their stocks under that regulation. If pairs and single birds were allowed to constitute a pen, there will be less necessity for dividing, and purchasers would be much benefited.

Although I can now scarcely consider myself an exhibitor, being very inconveniently situated for railway accommodation, yet I feel much interested in whatever may promote the success of these useful poultry institutions.—W. LORT, Great Heath, near Tenbury.

HARDY HERBACEOUS PLANTS.—ACHILLEA.

THIS genus belongs to the Natural Order of Composites, and though the members of this genus are very numerous, amounting, in number, from fifty to seventy known species, yet there are but few which are worth keeping, or growing in the ornamental flower-borders. Of course, it is desirable to see them all in botanical collections, where, by all means, they should be kept and grown for the sake of botanical knowledge; but for the flower-border but few of them are to be coveted.

The best and most noble plant of this large family is the *ACHILLEA EUPATORIUM*, or Caspian Milfoil, so called from being a native of the shores of the Caspian Sea. It was introduced to this country in the year 1803.

It is a strong grower, rising from two-and-a-half to three-and-a-half-feet high, according to the soil and situation it is grown in. It is an excellent plant for the centre of a medium-sized bed of any shape or form, or for a back row plant in long borders. It blooms from July to November, the flowers being of a beautiful golden-yellow colour.

Its heads, or corymbs of flowers, are large and spreading, though of compact habit, their upper surface being almost flat. The leaves are long and narrow, twice cut, and the segments saw-toothed and somewhat hoary. The whole plant is of a pale green colour. It is readily increased by root division in the spring. The plant does well in any good garden soil. Once well planted in the proper places in the borders, or beds, the plants may remain untouched for many years, except by the slugs, who are very fond of it. Where the borders are not properly attended to, and kept clear of fallen leaves, and the like, during the winter and spring months sad havoc is often made by these marauders. Many a choice plant is either entirely lost, or so much injured by the slugs eating out its crown shoots, and secreting themselves round about the crowns, or elsewhere, as never to recover. This might be prevented by frequent earth-stirring about the plants, and the use of a little quick lime dusted over them now and then.

T. W.

(To be continued.)

DISEASED CROP.

POST MORTEM EXAMINATION OF A COCHIN-CHINA COCKEREL, AGED FIVE MONTHS.

Disease.—Hanging crop, hard at the upper part, apparently not painful on pressure. *Duration*.—Four weeks. *Treatment*.—None; was amongst a large number of fowls, and taken no notice of; it fed well, never sickened, and had no difficulty in swallowing. *Death*.—Killed by hand. *Post Mortem appearances*.—Body very emaciated. On making an incision through the skin and integuments covering the crop, and through the crop itself, that organ was found extensively diseased. The whole of the outer portion was converted into a gristle-like membrane, three-fourths of its size was occupied by a hard tumour, which, when cut through, contained two abscesses of the size of marbles, each filled with inoffensive semi-transparent matter. The substance of the tumour partly cartilaginous and fibrous, with cheese-like deposits here and there. That portion of the crop, which, during life, could have been of any service, might have held about half-an-ounce of food; the passages to and from the crop were much thickened, the whole seat of the disease non-vascular. *Other Organs*.—Healthy.—C. F. PALMER, Betchworth, Surrey.

TO CORRESPONDENTS.

* * We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

BLACK SHANGHAE (C. A.).—Some observations that appeared in one of our recent numbers, on Black Shanghaes, were dictated not merely by what had been noticed at very many of our principal Poultry Exhibitions, during the last two years, but were also authorised by the opinion of many of our best breeders. That, generally speaking, they are characterised by the absence of the glossy richness of colour that distinguishes the Black Polish and the Spanish, fowls, will hardly be contested; nor have we, as yet, any certain record of a similar uniformity in the colour of the produce, to what may be observed in those latter breeds. Whether the Black Shanghaes should be assigned the honour of a "permanent and distinct variety," where like produces like, as a general rule, requires further proof than the public is as yet possessed of. "C. A.," and some other breeders, perhaps, may be fortunate in the possession of birds that comply with the requisite conditions more fully than those whose public appearance originated the remarks that were further confirmed by experienced persons conversant with this variety. But at the best, the good specimens are still the exception, not the rule; and while we admit that there is often much to admire in the figure of Black Shanghaes, and that their merits are, undoubtedly, great as table fowls, "feather" is a point in which they do not appear to equal advantage. "That the public should judge for itself," is the very aim and design of every article in THE COTTAGE GARDENER; but surely this is best attained by the free admission of impartial statements and opinions on either side. "C. A." may have a very high opinion of the variety in question, while "A. C." is at variance with this essential. Both may have their say, and the bystanders may afterwards judge for themselves when the matter has been thus discussed.

ROUGH PLAN OF GARDEN (E. C.).—You cannot possibly improve this plan, nor mar it by any alterations, short of levelling it all over and beginning afresh. It is like the highlandman's gun, it wants a new stock, a new lock, and a new barrel. The key-note is already in your hands. From the entrance, 16, and to "the way to the kitchen-garden," 17, is as straight as an arrow; the boundary-line on the left, going along that way, is also straight. The walks at both ends, and along the two sides, are also straight, then the space these walks inclose or include is perfectly regular, although one end of it is wider than the other. Now, there is not a man on earth who can lay down irregular beds, or figures, on this piece of grass, without some of them at least being out of place. There is not one of the present beds in the right place, for this reason—there is not a place for any of them. We would not do away with the walk across the end from the entrance, by any means, nor the border on the right going to the kitchen-garden, as that border, no doubt, was intended for evergreens, or some tall things to hide the flower-garden, *provided* the flower-garden remains as at present; but if the flower-garden were to be levelled, and laid out in the geometric way, that border ought to form a part, and then the grass to reach the side of the walk to the kitchen-garden. You will soon see plans that are suitable for your situation, with a little altering; and we shall point to the kind of beds that ought to make your corner figures (always the most difficult to manage well), and also those along your walks. All round the centre you will have no difficulty about.

DEUTZIAS AND WEIGELAS (Subscriber).—The best way with young plants of *Deutzia scabra* and *gracilis*, and also of *Weigela rosen*, is not to prune them at all for the first four or five years. By that means they will be stronger and bigger. After that, they should be pruned like gooseberries and black currants—that is, getting rid of as much old wood as you can, and leaving the young to flower and make flowering wood; in two words, *remove the old and spare the young wood* every time you prune them; but then, you are not on that account to cut away more old wood than will keep the bushes moderately thin. A young shoot, here and there, that is longer than the rest, or out of shape, is to be cut-in for keeping the bush uniform in shape. *Crown Imperials* want good garden soil; on "burning gravel" it is useless to expect flowers from them.

LAWN-TREES (S. T.).—*Picea Webbiiana*, *Arucaria imbricata*, *Cupressus macrocarpa* (your *Lambertiana*), and *Cupressus torulosa* will not be out of place, nor yet too high, on a narrow lawn, in ten or twelve years; but in thirty years they may be too close together, and too near the house. *Juniperus siceus* is just in the right place, and so are the others for the time you specify.

PEACHES AND VINES IN A GREENHOUSE (H. B. and others).—See an article to-day by Mr. Fish.

HEIGHT OF FRONT OF GREENHOUSE (H. B.).—If your wall-plate is six inches in depth, five feet nine inches will do, and even without that, if a six-foot man does not require to go close to the front in walking.

HARTLEY'S PATENT ROUGH PLATE GLASS (Ibid.).—This will supersede a blind for all such houses. In our own practice, we have not proved it for *very early forcing*; but first-rate gardeners commend it even for this.

BEDDING-PLANTS IN FRAMES (Tyro).—Give air back and front in moist rainy days, when the temperature is above 36°; but do not let the rain get among them. In dense logs the lights will be better shut.

DAISIES ON LAWNS (Ibid.).—Unfortunately, we know of no better plan than picking them out, and that may be done now as well as in spring. A little white Dutch clover might be sown in spring. Many of our lawns get crammed, owing to a false economy in not mowing early and regularly; the seeds are soon perished.

AMERICAN ALOE KEEPING (A Subscriber).—This will do very well in the hall, if the Arnott's stove does not raise the temperature above 50°. If it raised the heat much above that, it ought to stand near a window; and if not suitable to give it light, you will keep it better in the stable, at the farthest corner from the horse, allowing it to be dry; covering it with a cloth and hay in bad cold weather; and now and then, when the weather was fine and mild, setting it out-of-doors for a few years. If, however, you have treated it, as recommended, some time ago, by Mr. Fish, for Cactus, and have had it full in the sun, and allowed to get dry, it will keep very well in any dry, cool place, provided frost is excluded. If the soil is wet now, you might keep it in the hall until it was dry, and then move it to the stable.

GREENHOUSE VINERY ROOF WITHOUT RAPTORS (Clericus).—Where to introduce, and how to support Vines there? We do not see whether your squares are to be twenty-one inches in width or in length. If plants are to be at all an object, your Vine-stems should be four feet from each other. By reading Mr. Fish's article to-day you will perceive, that if placed so close as two feet eight inches, or three feet, you will be able to grow nothing beneath them when the vines are in foliage. In training, we cannot fancy anything better than small rods of iron, or stout wire, fastened to the wall-plate in front and behind, tied to the support: pieces of iron of which you speak, and still further supported by wire suspenders, fastened in drilled holes in the sash bar.

HOW HEAT OR HOW USE A FIVE-LIGHT PIT (E. H. Hampstead).—See some articles by Mr. Fish lately. A hot-water pipe would cost from 9d. to 1s. per foot, according to its size of three or four inches, and that independent of carriage and fixing. A flue would do well enough for Melons and Cucumbers, if securely constructed, and you could give moisture enough; but pipes, or a tank, would be better. In some districts, a small wooden tank, some four inches deep, two-and-a-half feet or three feet wide, divided in the middle, unless at the ends, and covered with slate, communicating with a small boiler, would be the cheapest and most appropriate for Cucumbers. If you have plenty of manure there is no occasion to arch the back; if a good deep ditch-like lining is formed, and plenty of manure in a fresh state placed back and front, it will give heat enough, with plenty of labour. Failing that, we would keep Melons and Cucumbers to frames, where you can *line* and keep the pit as you propose, as a cold pit, in which to keep bedding plants, and harder greenhouse plants in winter, and all kinds of plants during summer, according to the air you give them.

MODE OF MAKING VINE-BORDERS AND PLANTING THREE VINERIES (P. Marriot, Tring, Herts.).—By referring to the correspondents' column of last week, you will see a mode of making Vine-borders similar to your own; only, that it is not proposed to sweeten the loam by decomposition so much, nor yet to have the loam so strong; calcareous matter is also recommended, and bruised bones, in preference to so much rotten dung, the bones containing nourishment much longer, and giving it out slowly. We greatly approve of your mode of planting, as there is nothing like a good start. We also approve of the selection for the three houses, with the exception of the first; for, unless you are quite certain, from previous experience, and your planting inside, that the Joslin's St. Albans will not split in company with the Hamburgs and Sweet Waters, we would discard it altogether, and substitute a Muscadine and a Frontignac—the latter almost as good as Joslin's, and free from the splitting evil.

PEARS ((J. Y., Dublin).—Why did you not state if your pyramidal Pears are on Quince Stocks or not? Pray write again, and we will file your first letter.

CUTTING-DOWN OLD FRUIT-TREES (E. M., Aberystwith).—We never knew Damsons of that age (and twenty feet high) cut back, and we should much doubt success. Apples, if in health, are frequently thus handled, and sometimes very successfully.

BEAK OF SILVER-SPANGLED HAMBURGH (Amateur).—"Is it absolutely necessary for a Silver-spangled Hamburg cock to have a *white* beak? or would one having a *blue* beak (similar colour to his legs) be considered an imperfect bird?"—There are few Silver-spangled Hamburgs where a blue tinge is not visible on the bill, especially at its extremity; but this would not be considered as a cause for disqualification.—W.

MULBERRY LEAVES CHANGING THEIR SHAPE.—A Constant Reader says—"A friend of mine has a Mulberry-tree trained against a wall, over which it extends about forty feet. A few years since, the leaves in the centre of the tree, near the root, began to change their form, and this change of shape in the leaf has been every year gradually extending itself over the whole tree. Upon the same branch even the variation in the foliage is to be seen. I enclose some of the leaves for your inspection, and shall feel obliged by your informing me the cause." We never saw such a change before, but we do not think it unaccountable. The usual shape of the leaves we know is that of a pointed heart; but the change here is to a deeply-cut three-lobed form. Now, there is a variety growing in Sicily with leaves very much of this form, at all events they are palmate; therefore, this form is not quite a stranger to the Mulberry. But the true cause of this gradual change of shape, we think, is the gradual decrease in the fertility of the soil. It is very common to find the indentations in the leaves of plants increase with the poverty of the soil on which they are growing. Horse-radish, on a rich soil, has nearly smooth-edged, broad leaves, but, on a very poor soil, they become pectinated, that is, divided like the teeth of a comb. If the soil, to a distance of three yards all round the Mulberry-tree's stem, is well-manured, we think the change of shape in the leaves will be stayed after a year or two.

METEOROLOGY (E. H.).—Some of your suggestions are good, but we shall never venture to predict the weather.

FATTING COCHIN CHICKENS (R. B.).—Barley meal, wheat, and India meal, mixed with milk, fatten them the most quickly. They are of too quiet habits to require shutting up. They should have a free access to gravel and water.

EARLY POTATERS (Birkenhead).—The earliest variety is the *Walnut-leaved Kidney*; it is very different from the *Ash-leaved Kidney*, though this name is sometimes applied to it. The *Walnut-leaved* is not a large bearer; the tubers grow in a cluster round the base of the stem. The *Jutys* follow them in being ripe, and are best for the main crop.

LOVEL SHANGHAES.—An old Subscriber, H. H., will probably obtain what he requires of Mrs. Somers Smith, Parsonage, Little Bentley, near Colchester.

WEIGHT OF YOUNG GEESE.—Mr. W. Trotter says:—"Seeing that you state in your notices to correspondents, that a young, early-hatched *Goose*, of the Toulouse breed, having had good keep, should weigh fourteen pounds at Michaelmas, but the common, at the same age, would rarely be above eleven pounds; I make free to inform you, that my *Ganders* of the common breed, hatched as late as April 20th, 1853, weigh within an ounce or two of seventeen-and-a-half pounds, without having had extra keep. Perhaps some others of your readers will state the weights and ages of their young stock."

PINE-APPLE (T. Jones).—The crown is formed of the leaves, and they are of the same use to them as are the leaves of all the plants in the same tribe. If the crown is profliferous, reduce it to one as soon as apparent. Bad cultivation causes an excess of crown, such as too little heat and deficient light. Small crowns are always preferred.

WHITE FORGET-ME-NOT.—A Parson's Sister wishes for some, and would be greatly obliged if a former kind correspondent near Malvern could let her have some.

SELF-FEEDER (T. T.).—We never saw one. The Spanish Cockerel, with his tail on one side and white-feathered, will never be worth anything. It is quite impossible to prescribe for a hen's difficulty in swallowing unless we knew the cause.

NAME OF PLANT (T. Wilson).—*Pyrus aria*, the White Beam Tree. We should say it is not an eligible plant to graft Pears upon, though it would probably take upon it as they are of the same family.

WEEKLY CALENDAR.

M D	D W	NOVEMBER 17—25, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
17	TH	Titmice near houses.	29.189—29.070	56—42	S.W.	11	24 a. 7	6 a. 4	5 7	16	14 50	321
18	F	Widgeon arrives.	29.713—29.279	40—27	S.W.	—	26	5	5 42	17	14 38	322
19	S		29.763—29.548	53—36	S.E.	24	27	4	6 28	18	14 24	323
20	SUN	96 SUNDAY AFTER TRINITY.	29.550—29.304	53—43	S.	35	29	3	7 23	19	14 10	324
21	M	FRS. ROYAL BORN 1840.	29.096—29.634	54—45	S.E.	10	31	2	8 28	20	13 55	325
22	TU	Sun's declination, 20° 12' s.	29.299—29.042	47—29	E.	04	32	0	9 38	21	13 39	326
23	W		29.518—28.965	44—38	S.W.	18	34	III	10 52	22	13 23	327

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 49° and 36.1° respectively. The greatest heat, 59°, occurred on the 21st in 1828; and the lowest cold, 17°, on the 17th in 1841. During the period 85 days were fine, and on 97 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 17.)

ARABIS.—WALL-CRESS.

GENERIC CHARACTER.—*Calyx* erect; leaves oblong, egg-shaped, converging, deciduous; two opposite ones rather the largest, somewhat protuberant at the base. *Petals* oblong, reversed-egg-shaped, undivided, a little spreading, tapering at the base into broadish claws, hardly so long as the calyx. *Filaments* thread-shaped, erect, simple, unconnected, usually with four glands at their base externally. *Anthers* roundish-heart-shaped, incumbent. *Germen* line-like, about the length of the stamens. *Style* very short, or none. *Stigma* blunt, simple. *Pod* line-like, compressed, crowned with the permanent stigma; valves almost flat, ribbed, or veiny, slightly undulated from the protuberance of the seeds, quite as long as the membranous partition. *Seeds* in a single row, hanging down, oval or orbicular, compressed, with or without a border; cotyledons flat, accumbent.

ARABIS THALIANA: Common Wall-cress; Turkey Pod; Whitlow Grass.

Description.—It is an annual. *Root* tapering, fibrous. *Stem* rather branched, varying greatly in luxuriance, upright, simple or branched, hairy, light green, from three to twelve inches high. *Leaves* various in shape and size, spear-head-shaped, egg, or reversed-egg-shaped, entire or unequally notched, their downiness short, mostly forked; radical leaves close to the ground, numerous, stalked; the rest smaller, few and scattered, sometimes narrow-spear-head-shaped. *Stem-leaves* stalkless. *Flowers* small, clustered, on slender stalks. *Calyx* generally a little bristly in the upper part. *Petals* twice as long, nearly upright, white. *Glands* minute, and inconstant, curved, but scarcely protruding between the calyx-leaves. *Pods* ascending, on spreading stalks, slender, somewhat curved, smooth, hardly an inch long.

Time of flowering.—April.

Places where found.—Very common on walls, dry banks, cottage roofs, and sandy soils.

History.—The generic name has been surmised to have been derived from *Arabia*, in allusion to the sandy soil and other dry situations where the first-known species were found. *Thaliana* is derived from the name bestowed upon

the plant (*Thalium*), by Lugdunensis and Bauhin. Gerarde calls it *Paronychia*, thinking it might be the plant so called



by the Greeks. He says it grew "upon the brick-wall in Chancery Lane, belonging to the Earl of Southampton." It was commonly known in his time, as "Whitelow Grass, Whiteblow, and Nailwort," because "it hath been taken to heal the disease of the nails called a Whitlow."

WE do not know that a better definition of Protection could be given, than that it is keeping out of harm's way. Such a definition certainly applies most aptly to the best mode of protecting fruit-trees. That mode is retardation. What is called "protecting wall trees" is nothing more nor less than saving their blossom from being destroyed by frost in early spring. To effect this, the usual methods, from time immemorial, have been to cover them at night, so soon as the petals begin to appear, with mats, nets, evergreen branches, and such like. Such shelters are not to be neglected, but still this is not keeping the blossom out of harm's way. It is only sheltering them after they have got into danger.

To keep the blossoms out of harm's way would be

best effected by preventing that blossom expanding until the spring frosts are passed. That this can be effected, there is no doubt, if proper care and precautions are taken. Mr. Errington, many years since, made this suggestion, and we recur to it now because we would rouse our readers to try experiments during the approaching winter, and because of the following letter:—

"My Peaches this year, on a W.S.W. aspect, have been abundant. Those on a due S. and S.E. failed. This aspect has something to do with such result, because I have always observed that the blossom opens later there, and the leaves do not blister so much. This last winter, however, remembering what you stated

about retarding the blossoming of Peach trees by heaping snow about their stems and over their roots, I adopted every mode I could think of to retard my trees in blossoming on that W.S.W. wall. I unnailed them, and shaded them from sunshine throughout the winter, keeping them covered with wet straw and mats, but exposing them whenever the weather was cold during the day. With the same object I laid bare the roots, and I pruned late. My reward was having the trees bloom full a fortnight later, and having a good crop. When in bloom they were protected with nets the same as those on the S. and S.E. walls; but on these I had scarcely a dozen Peaches from twice as many trees."

We earnestly direct our readers' attention to this subject, repeating what cannot be too often repeated—"Remember, the best protection is to keep your blossom out of harm's way." Shelter them when they have got into that way, but keep them out of it as long as you can.

In general, pestilential disorders, as is the case with cholera and yellow fever, have arisen where men have been collected together in larger crowds than is consistent with all the natural requirements of the constitution; whether in armies; in popular gatherings; at fairs and markets, or about great commercial harbours. The whole air of such places becomes, at times, unqualified to restore to the blood all its renewing properties, and then the depraved blood (hardly adequate to supply the ordinary wear and tear of the frame) is altogether unable to repair any accidental injury or slight ailment.

The state of the air is worsened where the free, natural currents of large rivers are obstructed by dams and weirs, and their waters directed, cut off, or absorbed, for irrigation or other purposes. Large muddy deposits at the low levels are thus left exposed to the air, consisting of an anomalous mass of decomposed or decomposing animal and vegetable and earthy remains; for the low marsh is the very graveyard of the valleys and uplands from which the waters descend. The unhealthiness of alluvial deposits was noticed by Hippocrates, and history and ethnology have proved the truth of the observation. Clay is, indeed, the emblem of mortality.

It is a sad mischance, when, for our trial, or for social, or "whether for ancestral faults, or our's," we have foregone that choicest provision of Divine goodness, the natural reparatory power of the constitution. That eminent physician, the *vis medicatrix nature*, ever directs at the consultations of the poor, lonely, country practitioner, and too often stands aloof from the conclave of the doctors of the city. According to Cocker and Mr. Farr, the practice of the latter is the more unsuccessful; and where neither speedy death nor joyful recovery ends the consultation, the best prescription is, always, removal into good country air.

Among other large assemblies of men we have not enumerated religious meetings as being prejudicial.

The lustrations which are required for them; the clean garments worn, and the large and lofty domes in which they are commonly held, besides their high typical import, have a moral and natural tendency to form habits of quiet, cleanliness, order, and self-control.

The ceremonial laws once laid down by Moses, if no longer binding, yet remain for our instruction (in circumstances not wholly unlike, it may be) in that volume, that standing miracle which the Apostle tells us contains all things needful for this life, as well as for that which is to come.

We have no proof that the leprosy was of supernatural origin in the first instance. The Jewish and Egyptian historians tell us that the labouring slave population of Egypt was subject to a horrible epidemic before the Exodus. The Jews at that time occupied a low, marshy situation; they were worn down by privations and ill-usage, and denied the free exercise of their elevating and purifying religion. It is no contradiction to this view, that afterwards, clearly enough, the leprosy was made the immediate punishment for wilful irreligion, for pride, worldly-mindedness, and submission to a worse than Egyptian bondage. But the tenor of the old Levitical law seems rather merciful than penal towards the subject. And if its provisions should have anticipated every wise maxim of the nineteenth century, it would only be just what we might expect. Let us see.

In the first place, all slight (as we should say premonitory) symptoms are to be early looked to. The priest claims no extraordinary powers here. He separates the sick man from the camp, "for his own good, as well as that of the public, because free and fresh air would contribute not a little towards his recovery." (Biblioth: Bibl.) If after seven days this change of air induced no amendment, but the disorder was aggravated instead, the specific nature of the complaint was proved. We have already seen how characteristic a mark a breaking-out of the skin is, if a distempered condition, especially if it exhibit no disposition to heal of itself.

The direct connexion between disease and a want of cleanliness is asserted in the plainest words. And the provisions for enforcing sanitary observances, with all reverence be it spoken, appear plainer, and more practical than what we moderns have ordered. No excretions whatever were allowed to defile the Israelitish camp; they must be covered over with earth, forthwith, outside the camp.

Orders are just now beginning to be given for the daily scavenging of unwholesome places, and the instant removal, at whatever cost, of all offensive matters before putrefaction has too far advanced. Large masses of manure, dangerous to leave where they are, dangerous to stir, too, are, as a last resource, now ordered by the authorities to be covered well over with earth. They would only too gladly re-enact in the northern towns the Jewish prohibition of swine.

The distinction in favour of the sanitary qualities of fresh, running water, has scriptural authority. The land

of promise is to be a land watered with the bounteous rains of heaven, and not artificially irrigated; not watered with the foot, like Egypt. The house in which one has been sick is to be washed *seven times*, with free use of aromatic herbs. Fires are also to be used for purification.

Then, as to the clothes of the sick. Articles defiled by the perspiration of the whole skin only are to be washed; but if polluted by the ichorous discharge from a broken, diseased surface, they are to be burnt. We all know that clothes laid by will sometimes mould and decay; and the tendency of a certain condition of the air to accelerate these and similar dangers has been adverted to in a former paper.

At the present time, in districts affected with cholera, some people have taken note of the mouldiness which comes over joints of meat hung up in the air, thinking, by the character of this putrefaction, and its progress from day to day, to judge of the persistency or diminution of the choleraic taint in the air, as by a sort of choleraimeter.

On some such principles we should be inclined to account for the laws as to the leprosy in houses (and something of the same nature was observed during the plague in London). It is remarked, that, in later times, the Rabbis believed "that this sore disease was inflicted, first, on the houses and garments, as a punishment for lesser sins; and if men continued in a course of wickedness, then it invaded their bodies; so that it begun in their houses *which were not infected by the inhabitants, but the inhabitants by them.*" (Lewis.) The general immunity of the Jews from cholera is very singular; though under oppressive or intolerant government they have suffered, no doubt.

With the following quotations from the author of "The Analogy," we would, for the present, conclude our remarks on a subject upon which a vast deal more might be said:—

"The Law of Moses, then, and the Gospel, are authoritative publications of the religion of nature; they afford a proof of God's general providence as moral Governor of the world, as well as his particular dispensations towards sinful creatures as revealed in the Law and the Gospel." "But it is one of the peculiar weaknesses of human nature, when upon a comparison of two things one is found to be of greater importance than the other, to consider this other of scarce any importance at all." J. J.

At a recent meeting of the British Association at Hull, a paper was read by Dr. Horner, before the Zoological section, in reference to some discoveries concerning the chicken in the egg, and its liberation from the shell.

The subject is one that will interest many of our readers, and we have, therefore, endeavoured to arrange a brief abstract of the facts on which his contradiction has been given to the common opinion of the tapping noise that immediately precedes the exit of the chicken

from its shell being caused by the action of the beak on the latter substance.

Dr. Horner commenced by observing, that the chicken in the egg had often formed a deeply interesting subject of investigation to the physiologist, as well as to the naturalist, both of this and other countries, inasmuch as, from the facility of observation, it so admirably illustrated the order of development and growth of the different organs and parts of the body. After alluding to the various phenomena of incubation, he stated, that the special object of his communication was to announce the discovery of the nature of the sound which is heard within the egg during the last two days of incubation, and to show what is the exact mode by which the chick breaks the shell.

Now, the opinion so universally held, not only by amateurs and breeders of poultry, but also by naturalists and physiologists, that the tapping, or, more truly, the crackling, sounds, heard within the egg on the 20th and 21st days of incubation, were caused by the efforts of the chick to break the shell, he proved to be erroneous by the following experiments. First, by breaking a hole in the large end of the egg, when the bill of the chicken was seen to be quite stationary, and never coming in contact with the shell, though the sounds referred to continued as before. Secondly, by observing that the sounds were heard in other instances, before the bill had emerged from the folds of the membrane which envelopes the chicken, and, consequently, it could not then be employed to break the shell. And thirdly, by enlarging the aperture in the shell first made by the chicken, so as to isolate the bill, and prevent the possibility of its coming in contact with the shell, when the same sounds still continued to be heard as before—thus proving that the sounds heard within the egg were not, and could not be, produced by the bill of the chicken breaking the shell.

On examining a recently-hatched chicken, by placing the ear, and also the stethoscope, on its breast and sides, a precisely similar sound was identified as had been heard within the egg. Thus, as Dr. Horner observed, "my enquiry was complete—viz., that the sound heard within the egg during the last two days of incubation is not caused by the tapping, or by any other mode of contact of the chicken's bill with the shell; but that it is truly respiratory, and produced by the transmission of air through the lungs; in other words, that it is nothing more than the natural respiratory sound of the chicken." Such an explanation receives, also, collateral testimony from the discovery of physiologists, that air first enters the lungs of the chicken about the end of the 19th day from the commencement of incubation—viz., at the very period at which this sound, truly respiratory, first begins to be heard. In further proof of his assertion, Dr. Horner also ascertained that the frequency of the respiratory act exactly accorded with the repetition of the sound within the egg. The action of the heart of a newly-hatched chicken, he noticed, was so rapid that it could not be

counted, whilst its impulse and sound were discerned with difficulty.

The opinion that the shell is broken by a cutting or scraping motion of the bill through the agency of the pointed horny scale at its end was shown to be fallacious, as the membrane which lines the shell is, in the first instance, left entire, while the shell itself without has been chipped or broken off. Now, the shell, Dr. Horner stated, was really broken bit by bit, and with apparent ease by a healthy chicken, and generally by one single smart blow, although, in some instances, the blow is immediately repeated, or double. Each stroke of the bill was made with considerable power, impinging with force against the shell, as was seen, as well as felt and heard, by placing the ear against the part when broken. When the period of hatching approaches, the chicken, which previously had occupied but two-thirds of the space within the egg, now raises itself in the shell by a struggling movement, and by thus unpacking, as it were, of itself, acquires more liberty for its efforts of liberation from its shell.

Dr. Horner concluded by observing, that the reason why the shell is always broken from right to left (and not from left to right, as some writers had fancifully stated) is because the chicken is so packed in the shell that the head always reclines under the left wing, and on the left side of its body; so that it can only work and turn with facility towards that side.

It is satisfactory to observe that the attention of men of science has been given to subjects of this nature, and, although it may be said that such enquiries do not immediately benefit the more practical branches of poultry-keeping, still it cannot be denied that they serve a most useful purpose, in promoting experiments and habits of investigation that may guide us towards not only a more skilful, but also a more profitable, system of poultry management. Naturalists have too often regarded domesticated animals as removed from the sphere of their labours, under the same impressions as lead botanists to look with scorn on the florist's most cherished specimens. We hope, however, for better things, being satisfied that all that concerns the existence of either birds or animals in a domestic state must be interesting, and may be useful knowledge.

W.

BROCOLIS, CAULIFLOWERS, &c.

Who shall keep the cook in temper without a due supply of these useful adjuncts of the noble science of gastronomy? That our cooks are a most important class in society, who will doubt; and to produce first-rate dinners they should, of course, have first-rate materials; and here I must confess to the low feeling of envy—the cook can make her fire as she pleases, but can the gardener say the same of the weather, on which, as the world knows, the results of his practice must ever, in a great measure, depend, let his skill be ever so first-rate? Who has not heard of the poor frozen-out gardeners? but who ever heard of a cook being frozen out? for be the weather outside ever so severe, the kitchen server may still be seen going his daily rounds, albeit

his materials may be somewhat of an adamantine character.

It being admitted that a supply of these vegetables is liable to be almost constantly in request, let us see on what this depends.

On the face of the subject, however, we have to grapple with a most formidable foe, by far too well known to most of our readers under the title of *club*. At first sight, the culture of a Cauliflower and a few Brocolis may seem a small affair to some, but I can assure them, that with many families they are one of the prime essentials of the kitchen; for I may freely affirm, that the family I have the honour to serve have not missed, perhaps, some kind of Cauliflowers or Brocolis, a score times through the year during the last few years, that is to say, if they desire them, and, indeed, they generally do. Having had much to do with these vegetables in my time, I shall speak with freedom about their culture, &c. With regard to "the club," it is a tolerably well-ascertained fact, that hard-worked soils are more liable to it than those which have been under grass; in farming language, "leys." Both remedial and preventive measures have been adopted by me, during the last seven years, with such good success, that I boldly recommend them; for prior to that, I had the utmost difficulty in supplying our family with anything like regularity; since which, as before observed, failures are almost unknown. The preventive measure consists in deep trenching every three years, bringing up each successive time some of the subsoil, unless that be a rank clay. As to remedials, I use burned, or rather charred, rubbish freely, boring huge holes at the planting position, filling them full of the charred materials, and dipping the roots of the plants in soot-water mud—a pudding system—before inserting them in the prepared holes. But this I found not thoroughly satisfactory without a previous consideration; I found out that it was requisite, like many other things, to begin at the beginning, and proceeding on a sort of normal system. This consisted in taking means to secure healthy plants in the seed-bed. I, therefore, select the poorest plot in the garden annually, and trench it very deep in November, throwing it into a steep ridge, or winter's fallow; this is levelled down in the end of March, and a dressing, three inches thick, of my favourite charred weeds, &c., is forked in. I do not fork more than six inches in depth, and generally perform the operation twice when the soil is dry; and thus the surface, or seed-bed itself, is composed as nearly as may be of subsoil and charred material.

Our readers may—some of the younger portion, at least—desire to know something more philosophic concerning this old, but, as yet, ill-understood-disease, the devastations of which, if they could be presented in the aggregate from all quarters, would present a most astounding item in our economics. It is settled, I believe, by our Natural History gentlemen, that the swelling, known by the name of "club" in the Cabbage-worts, and by that of "anbury" in the Turnips, is produced by a small insect, a species of weevil. But, then, like the Potato botrytis, we may fairly turn and ask, what is the predisposing cause? In my opinion, hard ploughing, or hard digging if you will, is one of the principal. Land, under constant culture for years, must, of necessity, become altered in its constituents; there must be a lack of some matters, and a superabundance of others, whether organic or inorganic; the results from which could scarcely be expected to confine themselves to weakness alone, but extend even to the production of positive disease, or a vitiated constitution.

The vast amount of humus, too, which most gardens contain, seems here an evil. How the latter acts in the production of club, if it be so, I am at a loss to know; but certain it is, that this tribe will not succeed so well

on soils overcharged with it as on sound loamy soils. It seems probable to me, that this superabundance of humus might be corrected by the application of lime; and if I could obtain lime with the facility some persons can, I should certainly try it liberally. However, until we can obtain a broader and more scientific view of the subject, let me advise our readers to persist in the maxims here laid down, unless they happen to have some superior mode.

I will now return from the collateral branches to the main trunk of my subject, which is to shew how one portion or other of the families of Cauliflowers and Brocolis can be had in use nearly all the year; and I plainly foresee, that to say my whole say on this subject, I must finish it in another paper.

To enumerate the kinds in vogue would be an almost endless, and, I may add, a needless, task. It will be better to throw them into broad sections, and I will first point to the Cauliflower race, of which we have but two essentially distinct, as far as I am aware, viz.: the term old *London Cauliflower*, and the *Asiatic*, which is, I fancy, synonymous with that called the *Leyden Cauliflower*; and which, when true, used to be nearly a month later, and used for succession crops. Then, in Brocolis, there is the *Walcherens*, which are, probably, of the old *Grange* impregnated class, or hybrids partaking more or less of the Cauliflower character.

The *Capes* are another and distinct class, of very precocious habit, and of much importance in a succession, especially for small gardens, as they occupy less room than many others, and dodge in famously through the months of August, September, October, and November, and serve to stop a gap when Cauliflowers or White Autumn Brocolis are wanting; but our fancy cooks will not use them whilst they can command nice white Cauliflowers. The old *Capes* of former days were but two distinct kinds—*Purple* and *White*; the chief difference being in colour; and these, sown in the first week of June, might be obtained in nice head in half-a-score weeks afterwards. Now, however, there are many kinds of the *Capes*, if we may judge by our modern seedmen's list, such as *Adam's*, *Hammond's*, *Dancer's* &c.; but the real character of which, in the main, would not do for those eminent growers to cultivate whose names they bear. But of this matter, more before I close the subject. It appears that some of these modern *Capes* are hybrids, or cross-bred with our later kinds, for they have not the tendency to "bolt, or run," so much as the original *Capes*, to which, indeed, the latter were too liable, especially if impure in kind.

As another distinct section, I may now name the *Branching* or *Sprouting* Brocolis, of which there are some two or three varieties, all purplish, and a very useful class they are, possessing very distinct and peculiar habits, one of which is, that besides a head, they continue to produce small, neat sprouts, or buds, each of which is a Brocoli head in miniature, through November, December, January, and February. What *Brussels Sprouts* are amongst the Cabbages, these are amongst the Brocolis; they hold an equally important position. Indeed, no small family should be without them, and no large one will choose to dispense with them, if once they fairly scrape acquaintance with them. One of their chief features, to which I beg to direct special attention, is that they are of so excitable a character, as, with the least mildness of temperature, they continue to produce buds or sprouts in the very depth of winter, when most other Brocolis are dormant; for as to the other classes, all those which had not formed their heads by the end of October, or through the earlier part of November, remain stationary until the first mild weather in the end of January; requiring, in fact, a greater share of warmth to stimulate them. Their flavour, too, is, in my opinion, superior to most of the Brocolis; they

appear to combine a slight amount of that peculiar flavour which is found in the Turnip-top, with the Brocoli flavour; perhaps about ten per cent. of the former.

And now we come to the true spring Brocolis, which generally begin to come in about the first or second week in February, and continue until the middle of May, when they should be immediately succeeded by early Cauliflowers from hand-glasses. And thus it will be seen, that where it is desirable, where plenty of manure, labour, and genuine kinds can be got at, one or other of this numerous family may be had nearly, or quite, the whole year; and of what other vegetable but Cabbage can we say so much? Thirty years since, there were not half-a-score late kinds cultivated; the *Late Purple*, the *Brimstone*, the *Danish*, the *Late White*, &c., were the chief grown. In those days we had no glowing fancy seed-envelopes to be opened, as our friend Beaton says, by kid-glove men; and the superlative additions of *prime*, *choice*, *very superior*, *splendid*, *exquisite*, &c., did not show their face on the old brown wrappers. I cannot but think that it is now march of intellect with a vengeance, and I will engage, that even the addition of the above fine titles alone, and which are not half the modern vocabulary as applied to seeds, in all probability increase the profits of seedsmen a very many thousands in the aggregate. What a farce is it, from a beautiful paper fit for a duchess to handle, to take seeds endorsed, "*splendid Walcheren Brocoli, very superb*:" and when the cook calls out for a dish, to find the King of Spades disagreeably surprised, and standing aghast amongst his "*superbs*," at finding them a lot of rubbish, scarcely fit for cattle; and, indeed, no *Walcheren* at all. Here, then, one link in his chain has snapped, and he is called to book sharply.

I must here confess that much of this is due to a perverseness on the part of the public, one portion of which is keener by half in the heart after some new thing, than after higher points of culture, and a full elucidation of the habits, characters, and qualities of proved good things. I may here state, that it has been pleasurable of late to see a desire to avoid these extremes, and that some of our more respectable seedsmen have shown a strong wish to purge their lists.

But as to late or spring Brocolis, we have now a most voluminous list, most of them showing more or less the features of some of the before-named types, with sometimes appearances of an acquaintance having been formed with the Cauliflower and its congeners. But the worst of it is, that if you were to select twelve sorts from each of the lists of as distinct as the names can indicate, from three different seedsmen's catalogues, the probability is, that you would not have more than half-a-score distinct, or worth consideration, out of the whole thirty-six. In these facts there is nothing invincibly entertained, for it is traceable, in the main, to too great a desire for novelty.

With this late or spring Brocoli, then, ends my delineations of the classes which are placed in their order of succession; and in a succeeding paper, I will try to show how to handle them, so as to keep up a continual supply.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.

NOVEMBER 1, 1853.

THE meetings of the Horticultural Society are now held, for the winter, from two to three o'clock in the afternoon, and the last up-train in the morning, past my door, is at ten o'clock; therefore, I must either go by this train, or swallow an early dinner, and be off without nuts or nut-crackers; and so by the early train I go to these meetings, which allows me time to look round

Covent Garden market. Then, there is Mr. Steven's sale rooms close at hand, and it so happens that he sells all manner of fowls every day our society meets, and, of course, one must call in on passing the door, if only to keep up old acquaintance. I did not wait this time to see the high prices they bid for fancy birds, but I never saw so many really good birds before in this room. Of all he sells, the light Buff Shanghaes are my choice; and the best hen among them, according to my fancy, was lot 93; and the next, lot 86. Then, as many of our readers must have seen the result of this day's sale, and as very probably I may never see it, they can judge from the prices these two lots fetched how far I have succeeded in learning what are the best points in this breed; the greatest defect in either of these hens is a little wear in the comb. There were above two hundred lots, and I should think much about four hundred birds; and if so, three hundred of them were Buff and common Shanghaes. There were four or five pens, or lots, of jet Black birds of this breed, and a few White ones, also Partridge-speckled ones; but the Buffs formed the bulk of the sale, which was more like a show than a sale-room that day. When I was a flower gardener, I did not care the value of a straw for the "points" which the florists most prize in their new Dahlias, and when I saw a new Dahlia in a bed for the first time, if it did not come up to the *points* most prized by the ladies, I would out with the book and mark D. against the name; D. stands for many things, but in my garden book it stood only for "done with." Now, although we have had new Dahlias and other florists' flowers coming out every season, for time out of mind, and notwithstanding that some of us cared very little about the qualities which gave them value, still, a really good, new flower of any of the fancy breeds commands a high price—as much, indeed, as it did five-and-twenty years ago; I take it, therefore, that a fancy bird of any of the strains, and more particularly these Shanghaes, with all the points up to the mark of the fancy, will command just as high a price twenty years hence as they fetch at the present day; and for this reason, that it is just as difficult to get a really good fancy bird as it is to raise a superior seedling. But, already, it is just as clear as crystal, that the heads of departments in the poultry fancy are getting on the old horse which ran away with the florists, and never stopped till he and they got head over heels into the ditch, whence no one has ever yet got out with clear garments and untarnished reputation.

Be that *their* business, and mine to report on *Covent Garden*, of which I know much now, as that I regularly go to a certain stall for a bit of gossip, about flowers and new ways, before I go round the market; this stall is kept by a nice young woman, who thinks I am a foreigner, and never dreams that I am ever likely to put up in opposition to her, so I get into all the secrets about how they do things for the market. *Gauntlet* is the newest and best paying Geranium they have got. It is now on sale almost all the year round. It forces with less heat than *Alba multiflora*, is a good bedder, and comes "of itself," till very near Christmas. It is not "business-like" to bring plants of it for sale, as cut flowers pay so much better.

The next newest move—only three years old in this market—is mixing various kinds of live moss with cut flowers, and this has "taken" so well, that penny bunches of green moss are now as common on the stalls as cut flowers themselves. This certainly deserves imitation; you can hardly believe how nice the moss sets off Rosebuds, at this season, in glasses or china vases, in rooms, and the moss lasts a very long time in water; you can never make believe that you have living plants on the table by mixing their own leaves with cut flowers; therefore, when there is a better substitute, leaves ought to be sparingly used, and the best flowers

in the world are improved in looks by having something mixed with them in the glasses. The best cut flowers were the following: *Roses* of many sorts—the *Standard of Marengo*, the darkest of them, and a thin flower; *Mignonette*, border *Anemones*, *Pansies*, double *Marigolds*, *Heliotropes*, of which the old one was the best; *Wall-flowers*, *Picotees*, *Dahlias*, *Scarlet Gauntlet Geraniums*; and *Corn-flowers* (*Centaurea Cyanea*), *Sweet Geranium* leaves in bunches, *Scabious*, *Chrysanthemums*, chiefly the *Queen* and *Pompones*; *Camellias*, the old double white, and the old variegated; *Ten-week Stocks*, *Cactus* (*Epiphyllum speciosum* breed), *Aphelandra cristata*, *Ixora coccinea*, leaves of *Cissus discolor*, beautiful garnishers with cut flowers. *Alamanda cathartica*, *Daphne Indica rubra*, *Auriculas*, *Fuchsias*, *Heaths*, *Ageratums*, and *Potentillas*.

The *bouquets* were not numerous nor tastefully made, except three kinds. The simplest and best made one had a double white *Camellia* for a centre; the body was quartered in dark blue and white, with a fringe of *Mignonette* near the fancy cut paper in which all these market nosegays are put up. There were six divisions of dark blue *Violets*, increasing in breadth from the *Camellia* to the *Mignonette*, say a bunch of five *Violets* for the first round after the *Camellia*, and every succeeding round having a greater number of *Violets* in the bunch; the six white stripes to divide the blues were of single flowers of the double white *China Primrose*. This is exceedingly pretty when well done. We had the same style last spring—white *Hyacinths* dividing quarters of blue, and the dark *Hyacinths*, *Prince Albert*, to make black ribs for white quartering. A very simple nosegay is made with a white *Camellia*, or white *Rose*, for a centre, then a row of bunches of *Violets* round it, and outside a thin fringe of *Mignonette*. A child could make this nosegay.

Another tasteful nosegay was made exactly as I advise geometric flower-gardens to be planted. A garden so planted, or a nosegay so made, will *stand proof*, thus—Cut it into two across or lengthways; and if the two parts could be folded together, like two leaves of a book, the same colours and the same-sized plants would fall on each other throughout: a bed of yellow, eighteen inches high, could not fold over a yellow bed, only ten inches high, without a serious blemish. Now, the nosegay on this plan had, for a centre, a large, double, white *Camellia*,—a scarlet or rose *Camellia* would spoil the whole,—two bunches of *Violets*, two ditto of *Gauntlet Geranium*, two of *Scarlet Geranium*, two of the yellow *Cistus (ramosus)*, two bunches of *Heliotropes*, two double white *China Primrose*; three kinds of *Roses*, two flowers of each, then a fringe of *Mignonette*, and a row of rose-scented *Geraniums* for a guard. The colours in this nosegay were not exactly placed as one would arrange them in a flower-garden, but it was a very good attempt, and the best disposition of colours I ever saw in a nosegay. I could almost vouch for it that that nosegay was made by a woman, whose natural taste has not been vitiated by reading about these things, except, perhaps, in *THE COTTAGE GARDENER*.

The best *Vegetables* in the market were—White Turnips; Red Cabbage; Celery; black Spanish Radishes, as large as Ribston Pippin Apples; Brussels Sprouts, very fine; Savoy, good; Broccoli, not at all good; one lot of Leeks, after the Edinburgh fashion of having the bottom ten inches blanched as white as wax, but only about one-half the size for "cock-a-leeky;" Tomatoes, splendid, but from abroad, packed in sawdust, and the dust blown out with a common bellows,—not a bad plan, and a very quick one; foreign white Grapes, as nasty as anything, and anything but wholesome to eat: if I was the Lord Mayor, or a sanitary commissioner, I would get in the police to sweep every bunch or berry in the market into the sewers and down

the Thames, with whole basketsful of putrid Mushrooms; but there were some very fine, from the button up to the full-grown cap; English Truffles, fine, 2s. per lb.; very large Pomegranates, 4s. a dozen; fine-looking Quinces, 3d. a-piece; Spanish Water Melons, not half-ripe; cut slices of ditto, at a penny per tasting. Many other things and ways that I would rather speak of, even as a foreigner, to the flower-girl than to our readers. Pears, Apples, Plums, home Grapes and Pines, in plenty, and tolerable, but nothing that way that could be compared with what the Society brought together in Regent Street.

The finest fruit we had before the Society were two splendid *Queen Pine-apples*, from Mr. Blakler, gardener at Newton Park, near Bath, 5 lbs. each, and one of them 2 ozs. over; but it was the symmetry and colour, with the small crowns, which told so well. There were other two *Queens*, about the same weight, shorter and thicker, with larger crowns, and rather too ripe for carriage, and an *Enville Pine*, sent, I should think, for curiosity; it had five crowns, and eight suckers round the bottom of the fruit. Nothing tells here so well as *Queens*, *Black Jamaicas*, and smooth-leaved *Cayennes*, all the rest, *Envilles*, *Providence*, &c., are considered only as so-and-so. A fine dish of the most perfect berry and bloom of the true *St. Peter's Grape* were from Mr. Whiting, gardener at the Deepdene, who also sent three large bunches of the white *Calabrian Raisin Grape*—a very excellent late sort, which is not half so much known as it ought to be. Those who cannot yet manage to grow the *Muscats*, and yet want late white Grapes, should have this *Calabrian Raisin*, or the *Tre-biana*—a rounder and much larger berry, but both set as well as the *Hambro*. I think Mr. Whiting took a prize for *Coe's Late Red Plums*, against Her Majesty, but, with that exception, the Queen took off the rewards in all the hardy fruits. A large tray full of different kinds of *Apples*, from Her Majesty, were universally admired, and no one there had seen anything to come near to them this season. In reference to them, we were told, in the lecture, what is quite true, that the new kitchen-garden at Frogmore is the best in this country; that it is managed with great skill; and, indeed, that these very Apples were proof positive of what practical skill, with scientific knowledge, could effect in our climate, even in such a season as this; and that these beautiful Apples were gathered from semicircular wire trellises, or espaliers, which seems to prove this to be the best way of training our finest dessert fruits that do not require a wall. To all this might have been added a stimulus which bears favourably on all the royal gardens, and that is, that both the Queen and Prince Albert go into every hole and corner in these gardens, look at pots of cuttings, seedlings, and crosses, and all and every one of the hundreds of the little trifles on which a gardener's success so much depends, with as much interest as any of her subjects; and you will always find, that where the master and the mistress take an interest in, and look much into, the garden, the gardener is sure to succeed, whether aided by science or no science.

A Frenchman had above one hundred sorts of *Pears* at this meeting, and a great many *Apples*, which must have bothered the Society's officers considerably, as they had to make out the different names under which many of these Pears and Apples are known in this country, before the meeting, so as to be able to say which was which to such Fellows as might wish to buy fruit-trees from the Frenchman. After all this trouble, I was pleased to hear they had given a good handsome prize to the foreigner, which his large collection, and the expence and trouble he had in getting them over, richly deserved; besides, it is always better to be on good terms with our next-door neighbours; and to do the

French justice where justice is their due, is a better way than bullets and national defences of any sort. We were earnestly advised to give more extensive cultivation to the red Plum called *Coe's late Red*, with which Mr. Whiting beat the Queen's gardeners. There was only one dish of the White Alpine *Strawberry*, although one of the "special subjects" for that day. There were two kinds of fine-looking *Quinces* from Mr. Veitch, got from plants sent from Syria by the late Mr. Barker, but they could not tell if they were better, or very different, from our own Quinces. I saw some little *Apple-trees*, sent over by Mr. Barker, with Mr. Hogg the other day, which, they say, never become bigger than Geraniums; and they were in full fruit buds, and looked to me exactly like the old Oslin Pippin in habit. This Syrian, or Persian Apple, will grow as freely from cuttings as the Scotch variety. There were some fine Pears from the garden of the Society; and one enormous *Savoy*, the very biggest I ever saw or heard of. It would make "sauce," as they say in Suffolk, to a whole fitch of bacon; but, unfortunately, the Society still adheres to the old way of giving the French names, a yard long, to every blade and button which comes to them from France; but they might just as well experiment on growing French mustachios in their garden as think that these names are of any use or ornament to anybody here. There were three sticks of *Celery*, from the garden of the Society, just fit for table; one was *Cole's Superb Crystal*, perhaps the best white Celery going; the other two were only one kind under two names, one called *Sutton's Superb Red*; and here was a practical illustration of the nonsensical method pursued by this very Society with respect to French names; this very Celery, called *Sutton's Superb Red*, has been "sent out" by the Society, for twenty years, if I recollect rightly, under this phrase, *Celeri Gros Violet de Tours*, but all the towers and castles in the world will not turn true Britons to this effeminate kind of naming things in their own dominions; and the consequence is, that what we get for nothing through the Society, we have to pay for through the nose to anybody who is bold enough to give a right or a wrong English name to the thing in question. I was told, in the room, by one of the best judges in England, that *Cole's Superb Red* is just the same thing; but anybody's "superb," is better than French names for common vegetables. Roses, Chrysanthemums, and Dutch Hyacinths, &c., are very different things; when foreigners beat us, out and out, in raising new kinds of them, and a trade in them is established between the two nations, we are compelled to take to their names. In common vegetables it is very different; still, if *Brussels Sprouts* were to come to us now, for the first time, through the Horticultural Society, I wonder what *a la* in the world they would call it.

ORCHIDS.—The best Orchid in the room was from Mr. Maul, Nurseryman, Bristol, a beautiful plant of *Vanda cœrulea*, with five spikes of open flowers, and two spikes with the flowers in bud, each spike holding from eight to thirteen flowers, and they were of a beautiful colour; unfortunately, this fine plant could not possibly get a prize; the Society, however, must not be blamed for that, for they have a law, which they constantly publish, setting forth that every plant must be in the room by a certain time, else it forfeits whatever is due to it; and I can say, from my own knowledge, that if they were to give up this law in favour of their best customer, that is, in favour of her Majesty, they might just as well shut up shop, for plants would keep coming in till it was time to go to bed. *Maxillaria picta* was the next largest plant. It was from the Society's garden; and also the old *Achimenes coccinea*, a yard through, and in full bloom; two kinds of white-flowering Heaths, *scabriuscula*, pyramidal growth, and small flowers, and another, which

I forget. *Gesnera Herbertii*, a variety of *Zebrina*, with greener leaves, and comes a month earlier into flower in the country; but they said it is not different from the ordinary *Zebrina*; this beautiful plant, however, is never seen worth seeing about London. A plant of it, three feet high, with eleven spikes of flowers open, the leaves hanging over the pot, and shining like the skin of a well-fed Zebra, in their way, is a rare sight hereabouts. A bush of *Cuphea strigilosa*, a yard through, and four feet high, was much better than most country gardeners could produce at this season, and a *Strelitzia regina*, whose flower was likened to a fanciful bird, having a sky-blue beak and head, out of orange-yellow wings—a true picture, which would go farther with the crowd than the most elaborate scientific definition. Lastly, from the same garden, was a striking plant of the *Pompona chrysanthemum*, with purple flowers, but the habit is so short and stiff as to be reckoned unique; it is only under a number,—No. 60, Van Houtte. There was a full selection of *Pompones*, from Mr. Chandler, of Vauxhall, who is as celebrated for this as he is for fine Camellias. Some of them had their French names, and here are the colours of the whole—*Surprise*, light pink and French-white; *Model*, white; *Solfaterre*, yellow, as good as that in *Hendersonii*; *Le Nain Hebe*, a very pretty little blush flower; *Pequillo*, ditto, more of a rose; *Atala*, rose colour; *Sacramento*, not quite a clear yellow; *Argentine*, the best white,—this is the sort for hair wreaths and wedding nosegays, with Gardenias, Orange Flowers, and the white fimbriated Camellia; *Ranunculus*, shaded purple; and *Hendersonii*, the best yellow.

The next meeting of this Society was announced for the 6th December, so we shall miss the old Chrysanthemums again, that being a fortnight or three weeks too late for them; and this flower can neither be forced or kept back to do much good at an Exhibition; but, after all, this Society has done quite enough for the Chrysanthemums, and they might as well open shop for prizes to Tulips and Verbenas as give prizes to Chrysanthemums at the present day.

Last of all, we had two long stalks of the elegant Pampas Grass (*Gynerium Argenteum*) from one of the Vice-Secretaries, Robert Hutton, Esq., of Putney Park; and, after all that I said about this kind of Grass last year, I here found, from Mr. Hutton's account of it, and from the lecture, that much more might be said about it. "Queen Mab" complained to me, last summer, that her guinea plant of it was under a fairy spell—probably "the evil eye"—and that it would not grow at all; and, we were told to say that that was the general result from divisions of it by suckers. Mr. Hutton very kindly offered to show his beautiful plant of it to any of the members who might choose to go and see it, and the experience of it in the garden of that gentleman proves it to be the hardiest of plants; it was under water—I mean the roots—all last winter, without any harm whatever. In the pampas, or prairies, or deserts, or wilderness, where it grows, and covers miles and miles of fine open country in Buenos Ayres, it is worse for travellers to pass through than the tangled forests of India, as every blade is as sharp as a two-edged sword. We are told, that any one who had connections with Buenos Ayres might procure whole sacks full of the seeds of it for a mere trifle, and that the Horticultural Society had sent for, or were about to receive, ever-so-much of it; so that we shall soon have it all over the country, and thus a rare good opportunity will be given to the artificial flower makers for making imitations of it, in various colours, for ladies bonnets. Many of the country gardeners pronounce *Gynerium* wrong; they sound the *g* as in general, generation, &c., but that is not the way; the *g* sounds hard, as in guest, Guy Mannering, or guinea pig, and the *y* like to *e*, thus, Geenerium. D. BEATON.

OLD PLANTS THAT WILL BLOOM IN WINTER IN A GREENHOUSE.

CESTRUM AURANTIACUM.

THIS plant may be considered as a kind of cosmopolite. We have had it bloom freely in stoves, conservatories, greenhouses, and in the open air. Wherever glass is used for covering a conservative-wall, with or without heating, this plant should be tried. It is a native of Guatemala, and has generally been treated as a stove plant. Here, though a large plant may bloom continuously, the heat is apt to make it get naked of foliage, and to have but short panicles of bloom. Planted out in a warm conservatory, with a winter temperature at night, ranging from 45° to 50°, it will flower either continuously, or several times during the season, accordingly as it is managed in pruning-out fading flower-shoots, and encouraging young ones; every well-grown shoot exposed to sun and air, in such circumstances, producing its elegant panicle, or panicle-like head of bloom.

This flower is pretty rather than beautiful, consisting of dullish orange tubes, more like the blossom of a *Habrothamnus*, than any of the allied genera of Night-shades, and yet a neat plant of it is always interesting.

For pot culture, it would not be advisable to keep a plant above two years old. As a whole, young plants bloom and look best. I have now some small plants in a greenhouse, with five or six shoots each, about two feet in height, and the shoots for fully half of this height being surmounted with their panicles of bloom. These are something like the third or fourth succession during the season, for, unlike a large plant turned out in a conservatory, it is preferable, when the plant is grown in pots, that each shoot should produce its bloom at the same time, so that when done the plant may be set aside. These small plants, above referred to, had been cuttings in the end of May. A previous lot had been struck in March, and plants that bloomed in June were plants that had been kept in a deciduous state in winter, beneath the stage of a vinery; excited with more heat in the end of February; pruned back, shifted, and kept in a temperature higher than a greenhouse until the middle of May.

To have young plants in bloom from December to March would require a cool stove. From the middle of May to the month of December the plant will thrive in a greenhouse, and plants bloomed in summer, and set afterwards in a sunny place, out-of-doors, to harden their wood, will be safely kept beneath the stage of a common greenhouse, in a dryish state, almost as easily as a Fuchsia. In fact, the person who, from stored past Fuchsias, can have fine plants in May, June, or July, and nice plants afterwards, from autumn and spring cuttings, will have no difficulty with the *Cestrum*.

The culture and propagation is, therefore, easy and simple when the means are at command. Used for the greenhouse, it is deciduous for part of the winter. These, pruned back in spring, and supplied with an average temperature of 60°, will soon break, when most of the old soil should be shaken away, and fresh given in the proportion of three-parts loam to one of peat. If shifted again, the loam should still more preponderate. If now supplied with a little bottom-heat, growth will proceed rapidly. When the shoots are one foot in length more air should be given, and full exposure to sunlight, unless in very bright days. After the end of May, a cold pit, kept rather close at first, and more open afterwards, is the appropriate position.

Cuttings, either of the last season's deciduous shoots, or the young shoots that break from them, when about three inches long, strike very freely in sandy soil, in a slight hotbed. The latter class will require a bell-glass over them until they begin to root. When potted,

a slight hotbed heat will assist them, and after stopping them to secure the necessary number of shoots, and these are getting to the length referred to above, a cool pit or greenhouse, with plenty of air and light, is the place for them. Of course, when the plants are kept in a cool stove in winter, they will preserve a semi-evergreen character; but for summer, autumn, and early winter flowering in greenhouses, they do best when allowed to become deciduous in a cool temperature in winter.

HABROTHAMNUS ELEGANS.

The treatment of this has already been given. I allude to it here again for the purpose of recommending it as a continuous flower. Grown against a pillar, in a largish pot, moveable at pleasure, there is scarcely a time when you could not gather bunches of its pretty carmine tubular flowers. Winter, however, is the time when the summer-made shoots bloom most profusely. Cuttings, either of the young shoots taken off with a heel, or piece of the ripened one-year-old shoots, strike freely in a little heat. When potted off, the plants are better to be kept close and warm until the shoots are about a foot in length, after which, a cold pit and a greenhouse will suit them, the plant standing out-of-doors very well during the summer. A plant, struck in spring, will bloom freely the following season, as the second winter approaches, more especially if it has received plenty of light and air in summer. Being a native of Mexico, it is hardier than the *Cestrum*, retaining its evergreen character in a low temperature, such as from 40° to 45°.

FUCHSIA SERRATIFOLIA.

Though this pretty Fuchsia, by peculiar treatment, may be made to bloom at various periods, autumn and winter are the seasons in which it blooms most freely and naturally. "A Correspondent" may put such a plant against the back wall of a conservatory, without heat, with great propriety, though the plant be not a climber, as in such a position it will bloom all the winter if the frost is not too much for it. This species, and such allied kinds as *cordifolia* (and, we believe, *spectabilis*, though we have not had equal experience with that), may be made to bloom freely in summer, by arresting growth in autumn by means of dryness and coolness, and keeping the plant as cool as possible in winter, in any out-of-the-way dark place, where the vitality of the shoots was merely preserved. But nothing is gained by such trouble, as there are plenty of other Fuchsias in bloom at that period. Suppose, then, that such a plant is wanted for the winter of 1854-1855—obtain a young plant next spring, or strike some cuttings in a slight hotbed any time before May. Pot off, when struck, into loam and peat, lightened and made porous with sand and charcoal; keep the plant in a greenhouse or cold pit until the second week of June, or thereabouts, when, with due attention to shiftings, it may stand out-of-doors—first, in a sheltered place, and then full in the sun. But the best plan, after the plant is large enough to fill a five or a six-inch pot, is, by the middle or towards the end of June, to turn it out in an open border, attend to it there duly with water, and what little training it may require; and then raise it carefully by the end of September, or the beginning of October, and place it in an open, but shady place, such as on the north side of a wall or hedge. When the roots are working among the soil in the pot the plant will stand more light; and before it is likely to be injured by frost it should be moved under protection, and will soon be a gay object for many months. On potting from the border, even though the plants are a little shaded, frequent fine dustings of water over the foliage, from the syringe, will be more beneficial in

preventing an excess of evaporation than deluging at the roots. Such plants, or the smallest of them, pruned well in, and planted out the following June, will make larger specimens for a following year; but for pot-culture, unless standards are desirable, it would be as well not to keep them older, but to have a younger stock from cuttings.

BRUGMANSIAS, OR DATURAS.

If anything like system had been our object, we would have introduced these after *Cestrum* and *Habrothamnus*, as they, also, belong to the Nightshade order; and yet how unlike in their proportions. The tube of *Cestrum* would scarcely hold enough of nectar to wet the tooth of the tiniest fairy; while the corolla of *suaveolens* would be more than large enough as a punch-bowl for the good temperance folks; and the tubes of *sanguinea* and *lutea* would hold enough to please, for one draught, the admirers of pale bitter ale. These plants are also known as *Daturas*; and then, again, the species *suaveolens*, is known as *arborea*, and *candida*, and all names are appropriate enough, the flowers being very sweet, white, and the plant tree-like in the robustness of its growth. *Sanguinea*, dark red, is also known as *bicolor*. These plants are all useful for summer decoration in the open air, and the large, massive plants never look to advantage unless when they are planted out. In a roomy conservatory, well supplied with manure-water, they form splendid objects for many months. When used for the open air, I never made much headway with them; when left out, however, the lower part of the stems and the roots were protected. Lifted when the cold nights came, part of the softest shoots pruned off, and kept, after rooting has taken place, rather dry, behind a stage, or in a shed, where frost would not get at them; then watered, and placed in greenhouse treatment in spring, hardened by degrees, and turned out into rich soil in June, they will yield abundance of flowers in the later summer and autumn months. To have nice manageable plants of these for the winter months the treatment must be slightly altered. We have had them do tolerably from cuttings struck in spring, kept under glass, stopped several times, so as to be rather stumped, and then planting them out-of-doors in a rich border in the end of June, and re-potting them in the end of September. But such plants do best the second year, when, after they have done flowering, their juicy stems are hardened by sun, air, and little water, are then partially pruned, removing the softest part of the shoots, and daubing the cut ends with lime, and then are placed in the coolest dry place, where frost cannot reach, taking care that the soil is just not thoroughly dried. By April and May they should be stumped, or pruned pretty freely in, kept from frost behind a north wall, and then turned out into a rich border by the second or third week in June. These will be compact, bushy plants, with flower-buds peeping thickly by the month of October, and, raised carefully, and potted, will blow in a greenhouse for some of the darkest months, if a medium of 45° at night is maintained. This last remark, however, is chiefly confined to the *lutea* and *sanguinea*—as the large flower of *suaveolens* will not open freely under an average temperature of 50° at night, unless there is a bright sun during the day. The plant, altogether, would be more difficult to get into a suitable form for a small greenhouse. A plant of either of the others is not to be squeezed at, even in these days of novelty-loving and advancement.

Several plants of an herbaceous character—such as *Chinese Chrysanthemums*, *Salvia splendens*, *Salvia fulgens*, and *Cupheas*, of sorts, *Ageratum*, of sorts, especially a variegated-leaved one lately introduced, with some others—will all make nice, stubby, compact plants for winter blooming, if struck from cuttings in May, and planted

out thinly in a border in June, and lifted carefully and potted before the middle, or rather by the beginning, of October. Better plants will thus be secured, and less trouble involved than when growing such things in pots.

R. FISL.

THE GLADIOLUS.

(Continued from page 102.)

In my two former papers I described the culture of these fine flowers in beds and in pots. Those in beds, I suppose to be of the finest varieties; but there are two or three species that are worthy of a place in the mixed border, for even the *G. communis*, when in bloom, is as showy a flower as any in the border. The species I mean are *Byzantinus*, deep red; *communis*, red; *florabundus*, whitish; and *psittacinus*, yellow and red. These are all very cheap, the first, 1s. 6d. a dozen; the second, 1s.; the third, 2s.; and the fourth, 2s. for the same number.

Plant them in clusters of four or five each in the border, but first make a little preparation for them, by taking out two spadefuls of the soil, and putting in half a spade full of well-decomposed manure at the bottom of each hole, level the soil in upon it, and then plant the bulbs three inches deep. In such situations they may remain for three years, and then, when at rest, take them up and separate the small bulbs, and replant the large ones, after fresh preparing the stations for them. The smaller bulbs may be planted as I shall describe presently, under the head Propagation.

Propagation: by Seed.—As these roots propagate freely enough by offsets, it is not worth the trouble of raising seedlings merely for the sake of increasing the number of plants of any distinct species. The great object of this mode of increase is to obtain improved varieties, combining superior form, colour, size, and substance. This improvement cannot be obtained so certainly by merely saving the seed of any variety that will produce it. Like all other florist's flowers, hybridization must be resorted to, and that with considerable taste, forethought, and discernment. Choose, first, a well-formed flower, that is, with the petals as broad as possible, each petal or division so placed as to be salver-shaped; the three lower divisions larger than the upper, and a little more turned back, so as to show the beautiful markings on each, the upper petals being seldom marked; the throat or tube should be stout, and not more than one-and-a-half inch long. Such a shaped flower should be chosen as the one to bear seed. Then select a higher-coloured or better-marked flower, and dust the pollen of its anthers upon the stigma of the fine-formed flower, removing, previously, its own anthers; cover the flower, then, with some fine net muslin, to keep off the bees and flies. You have, then, so far as lies in your power, done your utmost to improve your flower. As soon as the seed is ripe, which may be known by the pod turning yellow and beginning to crack at the sides, gather it in the pods, and lay them on paper, in a window facing the morning sun. The pods will open very soon, and the seed may then be cleaned out from them and put by in a dry room till the spring.

This carefully-saved seed should be sown in pans, or shallow boxes, in March, placed in gentle heat; or, if the quantity saved is large, it may be sown on a gentle hotbed under a one or two-light frame, facing the south. The compost described in a former paper for the beds will be proper for the seed. Level the surface and pat it down gently. That in pans, or boxes, with a flat piece of wood; and if a frame is used, with the back of a clean spade. This pressing down is to make the surface even and smooth, so that the seed may be equally covered. Sow it so thin that every seed shall

have a quarter-of-an-inch square to grow in. When the seed is sown, then, through a fine sieve, cover it about the thickness of a penny-piece; give a gentle watering, and keep it close till the small grass-like seed-leaves appear; then give air daily, watering only when the surface is dry. In this stage the plants are fine food for slugs, therefore keep a keen watch for them, and destroy them every one. As the plants advance in growth increase the water and air; and finally, about the middle of May, expose them fully to the weather every day, only protecting them from heavy rains or late frosts. Towards the middle of June they may be exposed day and night. If all this has been judiciously attended to they will be growing freely through the summer. One point I had nearly forgot, but it must be attended to, and that is, the seeds of the summer-blowing varieties, such as *ramosus*, should be sown in a separate bed from the late bloomers, such as *gandavensis*, because the foliage of the former will sooner decay, and, consequently, the young bulbs will sooner be ripe and fit to take up; whereas, if mixed, the late growers would be at that time still growing, and there would be danger of the early ones starting their fresh roots. Sow them then separately, so as to have all the new bulbs ripened together.

When the leaves are decayed, procure a very fine sieve, and pass the surface-soil to the depth of one inch through it, picking out every bulb, however small; and when all are gathered, dry them very slowly, and put them away. This, for the early bloomers, should take place about the end of July; for the late bloomers, in October. The former should be planted in September, in drills four inches apart, in a prepared bed; cover them three inches deep with fine soil, and protect them from severe frost by a covering of two inches of spent tanner's bark. In the spring, remove a portion of this before the leaves appear, to admit the warmth of the season to enter the soil. In this bed they should remain two seasons, and by that time the bulbs will have attained a considerable size. They may then, when the foliage decays, be taken up, and the largest bulbs be sorted out and planted in a bed to flower. The late-blooming varieties may be managed exactly in a similar way, only taking them later, and planting them later also.

The smaller bulbs, not likely to flower, should be planted, at the usual time, in the nursery-bed, to grow larger another season.

As the seedlings bloom, all the decidedly-improved varieties should be marked and named, and afterwards treated as the older-established varieties.

T. APPLEBY.

(To be continued.)

STOVE FERNS.

(Continued from page 82.)

CASSEBEERA PEDATA (Bird's-footed).—A West Indian Fern, of a dwarf habit, and very beautiful. The fronds are divided into five parts, something like a bird's claws. Each division is pinnated, and droops gracefully downwards. The stems are black, and the whole plant does not grow more than nine or ten inches high. It is a rather delicate species, and thrives better with a mixture of charcoal amongst the soil. Increased, rather slowly, by its creeping rhizoma.

CERATOPTERIS.—*Keras*, a horn, and *pteris*, a Fern, that is, a Fern bearing a horn: a stag's horn, I suppose, is meant, because the fertile fronds are divided and twisted something like the branching horns of an old stag. These fertile fronds are very curious. The seed-cases are distributed, at regular distances, on the under

side, and the edges of the leaf are reflexed, or turned inwards, on the under side, partially covering the seed-cases. The infertile or barren fronds are beautifully veined, thrice pinnated, also reflexed at the edges. In the hollow of the segments of the fronds there are little knobs, which throw out roots, and will, in consequence, form plants, if properly managed.

C. THALICTRIODES (Thalictrum-like).—An annual aquatic stove Fern, common in ponds in hot countries. I have grown this Fern in large pots, just set overhead in a cistern, in the Orchid-house, fully three feet high, with both stalks of the fronds in high perfection. The plants, being only annual, die in the winter; but if young plants are raised, either from seed or by the little knobs, late in the autumn, they will survive the winter, and make finer plants the following summer. Sow the seed in a shallow pan filled with light compost, and keep it nearly full of water. To be quite safe, sow some in autumn and some in spring. The plants will soon come up, covering the soil at first with flat seed-leaves, which soon send up from the base small fronds. Then is the time to pot them off into thumb-pots, which should be immersed in the water, leaving the young frond above the water. As they advance in growth give more pot-room; the last shift need not exceed six-inch pots. Attend to this point—never allow the surface of the soil, even in the largest pots, to be above two inches beneath the surface of the water. I have rather dwelt upon the culture of this curious Fern, because of its being an aquatic, and an annual—two circumstances that rarely occur in the Fern tribe.

C. PARKERII (Parker's).—Very like the preceding species; indeed, so much so, that it requires a botanist's eye, and a strong magnifier, to detect a difference, that difference consisting in this species having an elastic ring to the seed-vessel. Cultivation exactly similar to the preceding species. Whoever can command a cistern of tepid water, in a moderately-heated stove, should grow these curious and elegant Ferns.

CHEILANTHES.—The assemblage of Ferns under this family name are all exceedingly elegant in form and habit. Many of them thrive best in an intermediate house, not doing well in any open, airy, greenhouse, nor in a close, moist, warm stove. They are marked in some lists as warm greenhouse Ferns! but then the young cultivator naturally inquires, what is a warm greenhouse? The only answer must be, a house heated to a degree somewhere between an ordinary greenhouse and a stove, consequently an intermediate house. Large must be the establishment that can afford so many different temperatures. To overcome this difficulty, I have placed the more delicate species on a shelf near to the front of the ordinary stove, where the air apertures were placed. These species requiring such a situation are indicated by an asterisk. All such should have a large portion of silver sand in the compost, and be sparingly watered, even when freely growing, and the leaves should never be syringed.

* *C. HIRTA* (Hairy).—An African Fern of great beauty. The fronds grow a foot long, and are covered with gland bearing hairs. They are thrice pinnated, the pinnae are delicately small, and the stems are brown. A very elegant Fern.

C. LENDIGERA (Maggot-bearing).—A decided stove Fern. I always found it thrive best in the Orchid-house. A more beautiful, elegant Fern is not in cultivation. It is not possible to say too much of its loveliness. The fronds are thrice cut or pinnated, growing a foot long, and of a most delicate green; the pinnae, or small divisions, are long and narrow, and the leaves are thickly placed on them, and exceedingly small, also; the seed-cases are few on each leaf, and are partially concealed by the margin reflexing half over them. It is not difficult to grow; and increasing pretty freely by seed, if

sown under a bell glass, on small porous sand stone; or young plants may be increased by division.

C. MICROPHYLLA (Small-leaved).—A West Indian Fern, with beautiful small leaves, covered moderately with gland bearing hairs. It is this pubescence that renders the species so clothed so impatient of being wetted over the foliage. The fronds are delicately slender, twice pinnated, growing two feet long, and gracefully waving with the least breath of air. The leaves are rather broad at the base, and the seed-vessels are continued round the edge of the leaves. It is very beautiful.

C. RADIATA (Rayed).—A South American, delicate, lovely Fern, almost equal to *C. lendigera*. Fronds a foot high; the branches are spread out, or rayed like a man's hand, each branch is pinnated. The leaves have rather long foot-stalks, jointed on the base, with the margins scalloped out or crenated. The seed-vessels are distinct, not continuous, but spread out often all over the frond; stems black, set upon a bundled rootstock. Divides with difficulty, but may be raised easily from seed in the same way as *C. lendigera*.

C. SPECTABILIS (Showy).—This is a rather diffuse Brazilian Fern, attaining a considerable size. The fronds are thrice pinnated, growing three feet long, and of a beautiful light green. It is of a straggling habit, the fronds being so slender that they often break down with their own weight. It is, however, a fine Fern if a little care is taken to support the fronds. The fronds are terminal, placed upon a bundled rootstock, or rhizoma.

* *C. TENUIFOLIA* (Slender-leaved).—This Fern, from New Holland, is remarkable from the circumstance of being deciduous, that is, losing its foliage in winter; this renders it somewhat difficult to cultivate, because of the transition from a growing state to a resting one. The only way to overcome this difficulty is to give but little water during its quiescent state; give only just enough to keep the roots alive; and whilst at rest, keep it much cooler. The frond is thrice pinnated, about a foot long. The leaves are long and sharp-pointed, slightly turned upwards at the edges. The stems are brown and scaly, a varied circumstance in this genera. Increases readily by division of the creeping rhizoma.

T. APPLEBY.

(To be continued.)

OLD FRUITS AND THEIR DECAY.

It is fortunate for the well-being of society that exposures of impositions should now and then take place, at the same time, it not unfrequently happens that unjust condemnation follows in the wake of an article, which, though not without some merits, had been puffed up to the world as possessed of every good point which constituted "perfection." Aware of the difficulty of pleasing every one, most respectable houses have been cautious, when issuing anything new, to give it no more merit than what they confidently believed it deserved; yet, now and then, an experienced hand may be caught erring, and an inexorable public are no ways sparing of their censures. As examples of this, let us turn to the *St. Alban's Grape*, the *Aberdeen Beehive Strawberry*, and, probably, the *Stanwick Nectarine*: this latter, however, I speak merely from report—the inefficiency of the others I have proved.

Now, I must say that it is wrong on the part of the public to pass an unqualified condemnation on those by whose authority these fruits were issued, for many concurring circumstances might tend to give the identical fruits submitted to them a degree of merit, which, in general, they did not possess; besides which, however keen and discriminating the taste of those to whom they were submitted might be, they must be something

more than "mortal" if they do not sometimes err, there being no mechanical means of measuring the merits and demerits of the various productions submitted to the ordeal of judgment—the human taste alone must settle this point.

I would ask any set of judges who have had experience in awarding prizes, at our country horticultural shows, for that infinity of fruits which is usually present at a September meeting, if they can retire with the conviction that they are sure they have given their awards to the best-flavoured articles? I have no doubt but they gave them to what they believed to be the best tasted; but when that organ is used to excess, as it must be on such occasions as those I mention, it can no longer retain its keenness and perception. I mention this, not from my own individual opinion, but from the recorded evidence of all those I have conversed with. I ask, then, is it fair, on the part of an indignant public, to condemn a new and but imperfectly-trying fruit; while, on the other hand, it is equally reprehensible for those who recommended them to uphold them still, against the combined opinion of judges equally qualified as themselves. In the latter case, an acknowledgment of error would be more graceful, because it is well known that some other fruits, whose merits they described, turned out all that could be desired. Thus, for example, the *British Queen* Strawberry, when well grown, is all that can be desired, and its wayward propensity to die off, &c., on soils unsuited to it, could not be known to those who first issued it.

Leaving this subject, however, might I ask if the addition made to our fruit lists be at all in proportion to the losses we have sustained by varieties becoming no longer healthy and vigorous as before? I confess appearances are sadly against us in this respect. Let us, for instance, examine our catalogue of Peach and other tender fruits, and see what addition has been made to them in the last twenty years, or more. Nay, even go back as far as the beginning of the present century, and see if the lists then issued by the leading houses in the trade did not contain almost all the kinds in general cultivation at the present time, and a great many more now obsolete, or rather lost to cultivation. When we compare this state of things with the almost infinite varieties into which our floricultural productions have been multiplied, the startling fact must convince every one that fruit growers, as a body, have been sadly remiss in their endeavours to improve, or even retain, the varieties of fruits they have, in other respects, taken so much pains to cultivate. Let us take the Grape, and we see that Speechly enumerated about 120 varieties as being in cultivation at Welbeck, and although his successor cut down the list to fifty, by discarding worthless ones and repetitions, still we doubt much whether fifty kinds can be found at any private place at the present day. I am aware, that the taste and discrimination of the public will be urged as a reason why only some few really good sorts are cultivated at the present time. This line of argument I fully admit, and probably with the Grape it may not be attended with any after loss, for new kinds (or what are said to be new) are occasionally added to our stock, so that we apprehend little harm from the loss of old ones. But then, take another useful fruit, the Apricot—and I might almost have added the Peach and Nectarine, too, but will confine myself to the first-named—and see what we have done in respect to it. I confess not being aware of a single addition, worthy of notice, being made to this useful fruit for the last forty years, and, assuredly, the kinds then grown are no longer the useful good fruits they were at that time. The constitutional decay of all varieties perpetuated by buds or grafts is now a recognised law in the horticultural code; consequently, the Apricot must

be verging fast into that condition which refuses any longer to flourish, from the same causes which have banished the favourite Apples of olden times from the orchards they were wont to thrive so well in. Now, I only ask those who have had the care of Apricot trees for some quarter-of-a-century or so, if their memory does not favour the belief, that better fruit was produced, in their younger days, than is now usually done; and have not the trees continued to exhibit an increased tendency to die off, not piece-meal, but in large lumps at a time; so that but few trees of twenty years old and upwards exist now, without presenting the mutilation I speak of? I mean, that there are really fewer old trees in a healthy bearing condition, at the present time, than there were twenty years ago, taking, of course, into consideration the increased number now grown. There are few fruits more really useful than the Apricot, and there are few cases in which a healthy set of trees continue to bear with that degree of certainty with which Peaches, &c., may be depended on; and, as I say, the liability of the tree to throw off a limb is much more so now than formerly; and though it would be more than most people would do to attribute this to any one cause, yet I have no hesitation in hazarding an opinion, that it is owing to the want of new varieties. As our *Moorpark*, *Breda*, *Orange*, and *Brussels*, though doubtless good in their day, have performed duty so long, they might, in perfect accordance with the wise intentions of nature, delegate to their offspring the task of prolonging their usefulness, if not improving it also. Now, the seedling varieties, which alone deserve the name of offspring, are nowhere to be found; so that we are forced to continue planting kinds which, after thriving a few years, and occupying a position as well-trained trees against our walls, disappoint us by dying off in proportions of something like one-third of a tree at a time.

I am aware there are places where this is less common than at others; yet I affirm that it is everywhere more frequent than of yore. I might add much more on this head, and might even include other fruits as well as the Apricot, but I trust I have said enough to call the attention of fruit-growers to the fact of their mistake in not furnishing us with healthy varieties of this and some other fruits, whereby we might hope to see the evils we now suffer from removed, and that seemingly sudden paralysation of such considerable portions of our Apricot trees no longer common, and gum, canker, and other sources of decay, which may often be traced to a constitutional source, disappear from amongst us. J. Ronson.

PRESERVATION AND STORING OF ROOTS.

THE preservation and storing of root-crops must be considered a subject next in importance to that of their culture, inasmuch as it is now becoming advantageous to grow a larger quantity, and more extended breadth, of those roots which require peculiar management to preserve them during the winter months, such as Mangold Wurtzel and Carrots. This arises partly from the necessity of substituting these roots for the Turnip and Swede, so as to avoid the evils which their too frequent repetition occasions, and partly to the increased demand for roots as food for sheep and beasts during the spring and summer months.

The sort of stock for which roots are required, necessitates a modification in the mode of management, in order that they may be preserved in a state perfectly

sound, and retaining all their nutritious properties, at such a period of the year as they are required for use, as well as in the situation most convenient and economical for their consumption.

The root to which I will first allude is the *Mangold Wurtzel*; and as it is the most tender root usually grown for feeding stock, the method of storing it will be noticed separately from that of other roots. I have, however, known them withstand a rather sharp frost when the roots have been covered with gross foliage; and I have found their keeping well in heap depends chiefly upon their being put together when the weather is favourable, for which reason, it is not good policy to defer taking up the roots beyond the middle of the month of November, more especially as in those seasons when we get but little frost, we usually have a succession of rain, which greatly impedes the work of housing root-crops. I like to commence pulling and casting Mangold about the middle of the month of October, and take it away to the store-heap about as fast as the pigs, cows, &c., can consume the greens. Some parties, I am aware, do not usually consume the leaves by stock, but plough them into the land as manure for the succeeding crop, and they, at the same time, object to their use for feeding on account of their laxative properties; but I have found this to arise not from their use, but their abuse, from feeding in too large quantities without admixture with a sufficiency of other food to counteract this tendency. When given to pigs, beans should be used in conjunction; and when to milch cows, hay, unless they have a portion of old-seasoned grass in their pasture to fall back upon. Mangold is about the least expensive of any of the root-crops in pulling and storing; and the better the crop, the less will be the proportionate expense. In taking them up they should be hand-pulled, to prevent bruising, as much as possible; and to free them from the earth attached to the rootlets, they may be struck one against another, unless the land is very tenacious and adhesive, it is then better to use an old hook, or the back of a knife, which will remove the dirt without damaging the bulb; the leaves may be twisted off by hand, or otherwise cut off by a hook, in an oblique direction, taking care not to cut across the stem or crown of the bulb. When the roots are being carted for storing, never remove them when frosted, but, if possible, when dry, and whilst the weather is open; nevertheless, they may be put into the heap or stack whilst wet and comparatively dirty, supposing time is allowed for them to dry in the stack previous to their being covered with earth. When the work of pulling and carting is proceeding, the horse and manual labour should be apportioned in such a manner that all the roots pulled should be carried to the stack the same day; but in case any roots are allowed to remain in the field all night, let them be covered with a few leaves, to prevent damage by the night frosts.

In selecting a position for the heap or stack, it should be as near as possible to the place of consumption. When intended for feeding cattle or pigs, in house or

yards, the south side of buildings, or under the shelter of trees, contiguous to the place of feeding, may be chosen advantageously, because, in such situations, it is unnecessary to have more than a slight covering of earth for the stack, besides a good coat of straw thatching. The stacks are made in different ways; some make them beside a high wall, and others with a double line of hurdles stuffed with straw, and thatched over in both cases; but I prefer placing the roots in heap, the width being six feet at bottom, carried to a point at the top, the largest roots being placed at the outsides, with their stems outwards, to keep the heap in proper position. The heaps may be continued to such length as the quantity of roots or the situation will admit. A covering of straw thatching should be given as soon as the heap is formed, but the covering of earth may be deferred for a little time.

When the crop is intended for the feeding of sheep in the spring or summer months, the roots should be placed in heaps, as before described; but in exposed situations, a thicker covering of earth may be laid on. This root is now coming into use for feeding sheep after the Swedes are consumed; for this purpose, it is usual to stack them in the field, as before described, there to remain until required for use, when the heaps are opened, and the roots strewed over the land for broadcast feeding, or else cut and placed in troughs. When the crop is taken up early, and placed in heaps at regular intervals, the field may be sown with Rye or Tares, and fed by sheep, in conjunction with the Mangold, on the same land, during the months of May or June in the following year.

We have no other root which can be kept with so much advantage, for such a lengthened period, as Mangold, and, therefore, it is necessary, not only to use great care at the time of storing in the autumn, but it is also requisite that the heaps should be examined in the spring of the year; and when it is ascertained that the roots are striking and throwing a yellow leaf, the heaps should be opened, and the roots turned over, taking care to have the sprouts and young rootlets rubbed off, and the heaps carefully re-formed, with a covering of straw and earth, to keep them cool, and uninfluenced by the summer sun. When this plan has been adopted, the roots will continue in excellent condition for feeding throughout the summer. During the past season, I have continued to feed my store pigs with Mangold until the latter end of the month of September, they being in a perfectly sound state; and I found, at that advanced period of the summer, that they required less admixture with other feeding materials. In my next paper, I propose to continue the subject, as applied to *Carrots* and *Swedish Turnips*.

JOSEPH BLUNDELL.

ANOTHER MASTER'S MASTER

By the Authoress of "*My Flowers*," &c.

WE need "line upon line, and precept upon precept," to impress our hearts, and direct our steps aright. My readers

will, perhaps, weary of the same thing over again, but for all that, I am going to follow up my last paper with another of the same kind, to show how dangerous is power—how evil is the heart of man—and how surely punishment follows us when we sin. Sometimes it treads upon our very heels; at other times it lags behind for awhile; but, depend upon it, like the tortoise, it will win the race at last.

William Blake was not a gardener, but he was everything else to his master, who was afflicted with so much bodily suffering, as to be, for months at a time, unable to quit his house. He was a bachelor, and his servant was, of course, of great importance to him. Blake had entered this gentleman's service when a boy, and had grown into his ways and habits so completely, that he became, at last, of the greatest consequence to him, and not the less so, because he bore with violence and testiness which sometimes broke out on his master's part. He was every thing to him; valet, butler, footman, groom, out-door servant, nurse, and general man of business. He was a very uneducated man, but he had a kind of natural sharpness that jumped with his master's humour, and made him useful and knowing. Everything was "Blake." His master heard, and knew, and said, and managed everything through Blake; and the consequence was, as it ever will be, in cases of the same kind, where God is not acknowledged as the director of all our paths, that everything was at sixes and sevens; everybody was misrepresented; some meant to cheat; others meant to rob; and his master, who was really kindhearted, was kept in a constant state of petty warfare with all about him. Every friend he had was sorry for the influence Blake had over him as he grew older and less able to act and think for himself. He was persuaded to do unkind, and uncharitable, and unwise things; and people knew it was from what he had heard through Blake; so that his name was not honoured among men, as a faithful servant's should be. The household was miserably ordered—there was no steady head in it; and when Blake and the cook married, which they did after quarrelling for many years, misrule and imposition increased and multiplied. The relatives of the master were greatly disturbed at the state of things, which grew worse and worse, but they could do nothing. Blake and his wife ruled the empire, and none could dethrone them. At last a family began to rise up, and then it was found best to make a change, but it was one almost without a difference, for they were put into the farm-house, which stood so near the mansion, that it was next thing to being under the same roof. Mr. G.—'s relations now succeeded in placing a respectable couple in his house, as cook and valet; but they very soon gave it up. Nothing and nobody could get on where Blake was prime minister. It was of no use to try to legislate in such a democracy, and therefore, poor Mr. G. was left at last "to darkness and to"—him.

Time passed on. Blake had a large family, and brought up his children to do nothing. His eldest daughter went out as lady's maid, but in a few months she returned upon his hands, with smart clothes, but no capacity for service. His son went sometimes with a whip after the team, but he was not taught to work for his bread, and looked like a lad who could do nothing. Blake grew fat, and seemed to thrive more and more; but every one said, when the next heir came to the property, his light would be put out.

And so it proved. Mr. G. faded, and his precarious health suddenly gave way. He died, and everything went to the next of kin. It was a matter of great surprise to all that he should not have remembered his old servant in his will; so fond of him as he had been, and so useful as Blake always was to him; but he left him nothing. As soon as decency permitted, he had notice to quit his house, and the management of the farm was at once taken from him. This was a heavy blow to Blake: he was completely fallen, and no one pitied him. Not a creature was there to whom he or his wife could turn for comfort or sympathy. Neither of them were people of character, and they had no friends.

Blake began to look out for another situation as bailiff. He was a good manager of land, &c., and talked magnificently of one or two gentlemen who "wanted" him at a hundred a-year; but no one was forthcoming to engage him, and he was soon going round to solicit assistance to take his family to Australia. This was the last "chance,"

as it is called, for the man, who, for many, many years, ruled and lived upon his master.

Preparations for departure were made, when the needful means were got together. Blake and his family passed away without any one knowing or caring anything about them; the only circumstance noticed was, that one *pouring* day, a covered waggon left the village with Blake's effects, and the remainder of his children, under the charge of his eldest daughter, who went off in a very smart silk dress, with large white muslin cuffs. Thus closed the prosperous career of William Blake, and the prospect of a new world opened upon him. The last accounts that reached England of his situation, said, that his eldest daughter was laid in the grave; his wife and other children were suffering from sickness, and himself and his son working in the fields.

Let no one exult over misfortune even when it is the result of misconduct. "Let him that thinketh he standeth, take heed lest he fall." How affecting it is to see a fellow-creature in trouble! and it is worse when brought about by his own hand. Readers, tremble! If you know, in your heart of hearts, that you are walking in any degree as Blake walked—Oh, take warning! stop! "Turn ye from your evil ways. Why will ye die?" If you are doing that which is "not lawful and right," the Lord will avenge it. You may be going comfortably on now; you may be serving masters who do not see, or suspect; but, if you are defrauding them, or misleading them, or influencing them against others, and to your own advantage, you are doing Satan's work, and he will give you the reward. Depend upon this—that to be faithful to our fellow-men, we must first be faithful to our God. We cannot trust *ourselves*, unless we are held by that bit and bridle of God's Word; unless we can *feel*, "Thou, God, seest." What else can govern us? Satan is stronger than we are; and, unless the Lord fights for us, we cannot resist his temptations and snares.

Let the lives of two men in one parish strike the hearts of us all. Let us not pride ourselves on our better conduct. Who can tell, till he is tried, of what stuff he is made? Reader! "Suppose ye that these Galileans were sinners above all the Galileans, because they suffered such things? I tell you, nay; but except ye repent, ye shall likewise perish." Let us turn from our wickedness, and live.

TREATMENT OF FOWLS AT EXHIBITIONS.

Now so many of our principal Poultry Shows are forthcoming, perchance the following few remarks may benefit brother-exhibitors.

We hear much said of "Poultry," or "Exhibition Fever;" I am convinced it may, in a great measure, be obviated, not only by proper care in the acting committees of the various exhibitions, but equally so by simple rule in the owners themselves. There is no doubt, that many specimens brought into competition could not be maintained in the same state of vigour any considerable time, even if *not* subjected to the ordeal of an exhibition-pen. Fed luxuriously every day, as many are, on greaves, large quantities of fresh meat, &c., &c., is it matter of astonishment that these fowls, after a couple of day's confinement on less stimulating food, should appear low and dispirited?

But, even a far greater cause of injury arises from the ill-judged arrangement of exhibitors, in giving, at the last moment before sending them, superabundant quantities of hard corn, "lest the poor things should be famished by the way."

The consequences need scarcely any detail: the crop becomes well-filled, and, during the alarm consequent on railway transit, digestion is impeded; hence, when arrived at their destination, thirst having naturally ensued, water is taken in very unusual quantities; the grain being still in the crop becomes even more enlarged; inflammation succeeds; the comb blackens; the feathers ruffle; and, certainly, the (mis-called) kindness of their owners has placed them not in the most favourable view for the inspection of the judges; nor is it at all likely to do otherwise than sadly injure their constitution for future "breeding purposes," even should they survive; an event, by the way, somewhat problematical.

I have invariably found soft food essential to well-doing in all cases of sudden confinement; and I feel perfectly assured, that if exhibitors, generally, would feed less liberally when about to despatch their poultry, and on such food as Scotch-oatmeal and barley-flour, mixed with water, the same plan being adopted immediately on their return, we should find a very large discount from the almost universal complaints now afloat as to "Exhibition Fever." Hard corn should, too, be given in *very* spare quantities during exhibitions, and that only about mid-day—more to promote exercise than feeding—and if green-food could be placed within reach of each fowl, the benefit would be very great, whilst a constant supply of clean water is an attainment that is obligatory and *must* be ensured. To be brief; if fowls were fed more naturally for exhibitions than is now generally practised, it would remove a very great impediment to their coveted success; and even slight fasting would entail far less injury than over-repletion. I am not an advocate of excessive feeding of "Brood-stock;" let them be fed liberally, as a general rule, by all means, and on good grain; but, if over-fatted, the dearly-bought experience of many of your readers (concurrent with my own) as to unshelled eggs, or, perhaps, scarcely any amount of eggs at all, will be the best attestation of the verity of my statements.—EDWARD HEWITT, *Eden Cottage, Spark Brook, near Birmingham.*

HARDY HERBACEOUS PLANTS.

(Continued from page 111.)

ACHILLEA TOMENTOSA.

THIS, the Woolly Milfoil, is a very desirable little ever-green, hardy plant, and is readily known from all the rest of its family. Its flowers, like the Caspian Milfoil, are of a beautiful golden-yellow colour, produced in close, compact heads, or corymbs. Its leaves are all finely and many-times cut, both root-leaves and those of the stems, too, and woolly, especially when the plant is flourishing upon high ground. Botanists describe the leaves as pinnatifid, or doubly pinnatifid, the segments crowded, linear acute.

This plant rises from nine to twelve inches in height, and flowers from May, more or less, to the end of September. Its height tells us that it should be a front plant in the flower borders. It is a delightful plant for the Rockery, and once well-planted, either in the dry open border, or upon the Rockery, it may stand in the same spots for years, if the plants are kept clear of fallen leaves and the like, which are so apt to be a harbour for slugs and other vermin, during the winter months, and which are very destructive to it.

It is readily increased by root-division, either in the autumn or spring months. Indeed, I would not refuse a slip of it in any month in the whole year, if I was in want of it. The same facility in rooting occurs almost with all hardy border plants. They will admit of a slip being taken from them almost at any time.

In low, damp situations, where there is much chance of losing this plant during the winter months, lift up a plant or two out of the borders towards the end of September or beginning of October, and pot them; and, if any one time is better than another, this is the best time to make an increase of this plant by division. When potted, the plants should be placed out in some place where the eye will be upon them now and then, to see that they are not being eaten up by slugs, or wanting for a supply of water, and the like, as it is soon lost, much sooner than many persons are aware of.

Plants, in pots, like this, should always have some sort of protection during severe frosty weather, and, like the Cauliflower, should have all the open air possible in favourable weather.

In Curtis's *Botanical Mag.*, vol. 14, page 498, he says, "This plant grows naturally in Spain, the South of France, the Valais, and Italy; and was cultivated in the Oxford Botanic Garden, in 1658." It may be supposed the plant was not very commonly to be seen then, neither is it half so plentiful as it deserves to be now, although, since then, its name has crept into our English Floras. In Lindley's

"Synopsis of the British Flora," he says, speaking of its localities, "It is found in dry, hilly pastures, in Scotland and Ireland." This points out to us, that open, dry situations are where we should plant it in our flower gardens. Babington, in his "Manual of British Botany," says, "This plant is an escape from cultivation, or a doubtful native; but whether properly indigenous or exotic, it ranks in the list among our choice Hardy Herbaceous Plants." T. W.

DISEASES OF POULTRY.

ROUP.

ALTHOUGH I have been for many months engaged in making a series of experiments on this disease, I have delayed communicating the result, in the hope that I might be able to furnish some satisfactory hints as to its cure.

Roup is, essentially, a disease of the lining membrane of the nose, the eyes and mouth becoming affected secondarily. In the first instance, this membrane is slightly inflamed, it thickens, and thus partially obstructs the narrow passages of the nostrils, and as the fowl habitually breathes through the nose, and not through the mouth, a greater effort is required to force the air through the narrowed passages, and this produces the distention of the top of the throat, and under part of the mouth, which is much dwelt upon, by some writers, as an early symptom of the disease; at the same time, or shortly afterwards, a thin, clear discharge may be seen issuing from the nostrils, this dries upon the beak, or by its stickiness collects small feathers, &c. In many cases, the disease makes no farther progress, and many remain in this state for weeks, without change, when, perhaps, it should rather be deemed catarrh than roup.

In severe cases, the difficulty of breathing through the nose increases, and part of the air is forced through the tear passage (that leads from the front corner of the eye into the nose), and causes a degree of frothiness which partially obstructs the sight, and which is very characteristic of advanced stages of the disease; the discharge at the same time loses its clear transparency, and becomes creamy and offensive, and from the almost entire closeness of the nostrils it collects internally, in the cavity of the nose, in some cases becoming quite solid; the irritation caused by that portion of the discharge which passes through the eye produces great swelling and purulent inflammation of the eyelids, which, in severe cases, are entirely closed from the discharge being so long retained in the nostrils; it becomes putrid, and of an exceedingly offensive and well-marked odour, which has sometimes reminded me of that of bad glue. The constitutional disturbance is very considerable; the fowl is feverish, unwilling (or, perhaps, from blindness, is unable) to eat, but drinks freely, and very frequently sinks under the disease.

Anxious to put to the test of experiment the contagious or non-contagious character of this disease, I obtained, from a neighbour, three chicken in the worst possible stage—so severely were they affected, that one died immediately after reaching my house; these birds I placed in an empty, dry attic, freely open to the sun and air, and they were supplied daily with fresh mould, turf, water, food, &c. Immediately on receiving them, I took two perfectly healthy, robust chickens, two months old, and placed them in the same room; into the nostrils of one I rubbed the discharge from the dead fowl, and the other was merely placed in the apartment for a week; these two fowls, thus treated, were unaffected, and I began to suspect roup to be non-contagious. At the end of that time, the chicken that had not been rubbed with the discharge showed signs of the disease, which ran rapidly to a fatal termination.

Now, when we take into consideration the fact that this bird was amply supplied with wholesome food, the room dry, well ventilated, and kept clean, it appears to me as strong a proof as one case can be, that roup is contagious, for no fowl could be in more unlikely circumstances to contract a catarrh. The other chicken that I endeavoured to inoculate showed no signs of the disease for a fortnight, when (the two remaining original patients being disposed of, one by death, and the other having recovered under treatment) I most thoughtlessly placed it again in the yard

with my best fowls. Now, mark the result. In a few days I saw that this fowl was affected, I instantly removed it, but too late, for the greater part of the yard became affected, and in spite of every care, the disease proved fatal to more than forty of my very best young birds—Dorkings, Spanish, and Cochins.

Perhaps the non-contagionists may say—Oh! it was the wet weather which has caused the disease; you were not more unlucky than others. Perhaps so; but how came the first bird affected? and how was it, that in the next run, belonging to a neighbour, and separated only by open lath-work, where forty Cochins and Dorkings, of all ages, were kept, under circumstances much less conducive to health, being badly housed, very dirtily kept, and irregularly fed, *not one* was affected?

I am neither so ignorant of the true laws of medical evidence, nor sufficient of an empiric, to regard the contagious on non-contagious character of this disease so settled by a single experiment, even though extending to so many cases; at the same time, I cannot but maintain that it affords a very strong presumption that it is contagious. Again, the numerous letters that I have received, stating that the introduction of a single bird from a show or sale-room has often been the means of introducing the disease where it was previously unknown, tend to the same conclusion.

And the practical experience of such old breeders as Roscoe, Baily, &c. has led them to the same result. As to my "foregone conclusions" and "self-imposed judgment" to support "previous impressions," &c., of which I am accused by Dr. Horner, at page 70, I may remark, that they constitute one of those *fads*? which some writers are particularly fond of setting up for the pleasure of knocking down again. I had *not* arrived at any previous conclusion as to the contagion or non-contagion of roup, and, therefore, performed the experiments (as it turns out, at a very heavy pecuniary sacrifice), in order to ascertain the point; and, as to the "genuineness of the preliminaries," I must, even in spite of the doubt in the Doctor's mind, hold myself perfectly competent to pronounce as to whether the subjects of my experiments were or were not affected with the disease.

In my little work on "Profitable Poultry," I stated, that several diseases had been confounded together under the name of roup. Dr. Horner "repudiates the notion." If he will turn to "Richardson on Domestic Fowl," he will find that under the same title, true roup, gapes, inflammation of the trachea, and inflammation of the tail gland, are all confounded together.

As to the disease being merely an inflammatory catarrh, its extreme virulence and extraordinary fatality, is, to my mind, a conclusive negative to the supposition; common catarrh is not a fatal disease, and is amenable to medicine, which is not the case with roup.

This leads me to the treatment. If I had arrived at any satisfactory conclusion this article would have been published long since. I have been continuing my experiments with various remedies for many months, having tried stimulants of various kinds; calomel, with and without opium; tonics, as iron, gentian and sulphur, purgatives, &c., as external applications. I have also employed mercurial ointment; nitrate of silver, tincture of iodine, &c., but all with very indifferent success; an equal proportion recovering under every kind of treatment. Recently, I have found injecting a solution of sulphate of copper, or sulphate of zinc, into the nostrils, more efficacious than any other mode of treatment. A solution (five grains to the ounce of water) is taken, and after pressing out the discharge, is dropped into each nostril; as it is difficult to convey fluid into the nose from the front, I usually take a few drops in a tube (a very small quill will answer), and opening the mouth, pass some into the cavity of the nose, through the roof, dropping it into the long slit which may be observed there; to perform this, it is requisite that the fowl be held on its back by an assistant. In this case, the remedy is at once applied to the affected membrane, and with a much more beneficial result than when medicines are given internally.

In one or two severe cases, where the secretion has become solid, causing a firm, permanent swelling, I have found it requisite to open the side of the face, and extract

the secretion; but it is not in many cases that it is sufficiently solid to be readily removed in that manner.

It is hardly requisite to state, that in order to lead to any hope of success, the patients must be warmly, dryly, and cleanly housed, the heads bathed, and that they must be supplied with abundance and variety of good food; as the sight is often obscured, meal in paste will be found better than whole corn, and a little stimulant, as cayenne or common pepper, I think desirable.

My opinion has been asked respecting an Essay advertised on this subject. I fooled away a shilling on its purchase, and had a pamphlet sent me about one-quarter the size of the little books so industriously and gratuitously circulated by Mr. Moses, and found that it contained nothing more than might be found in any of the old poultry-books—scraped horseradish and similar substances being the proposed remedy!

The length of this paper precludes my noticing the criticism of Dr. Horner, on my statement respecting "Gapes," which I shall have much pleasure in replying to next week.—W. B. TEGETMEIER, *Tottenham*.

CROWING HEN—POST MORTEM EXAMINATION.

It may be in the recollection of some of my readers, that I exhibited a specimen of a crowing hen, at the Surrey Poultry Show, in contrast with what I regarded as a Hen Cock or Hennie; stating, at the time, at page 389 of the last volume, that I believed the change in habit and voice to arise from a diseased ovary or oviduct. A few days since I killed the hen for the purpose of examination. All the digestive and respiratory organs were perfectly healthy; the ovary, also, was not apparently diseased, although in an inactive state; the oviduct or egg-passage was discoloured at one part of its course; and loose among the intestines, I found four yolks, or ova, one nearly globular, the others of irregular shape, having adapted themselves to the form of the surrounding parts; they were covered with firm membranes, evidently the result of the inflammation they had excited by escaping into the cavity of the body, instead of having been received by, and passed through, the oviduct.

It is surprising that the inflammation so excited did not prove fatal, as I have noticed, in a large number of cases where an ova or yolk has escaped from the egg passage. In this case the inflammatory action had entirely ceased, and was only to be traced by the resulting false membrane left behind; the hen, therefore, was in a healthy condition, and might, in all probability, have lived some years.

The practical inferences to be drawn from this case and others are these; that when a hen ceases to lay, and takes to crowing, the cause is usually a diseased state of the ovary or oviduct; and, therefore, it is useless to keep her, as it is in the highest degree improbable that she will ever lay again.

This state of things, however, should not be confounded with another, in which hens sometimes crow whilst laying, or at other times, arising merely from an acquired habit. I believe this peculiarity to be rare, a case never having come under my own observation.

I beg to return my thanks to the gentleman who kindly forwarded the hen, as it has added an interesting specimen to my museum of morbid specimens.—W. B. TEGETMEIER, *Tottenham, Middlesex*.

ANTS—WASPS—GLASS SHELTERS.

On the 19th of April, 1852, I addressed you under the present signature, and was much obliged by your reply. The recipe for the ants did not answer, so I adopted another plan, with perfect success. I made a mixture of a little rum and brown sugar, put it in the saucers of pots, clear of the roots of my trees; it attracted them so strongly, that in the space of three weeks, with the all-powerful aid of boiling-water, I must have destroyed myriads of them, and this year there has not been one on my wall. If ever enquired about on this subject, you can safely state the above in reply.

I was, however, desperately annoyed by wasps, in September; they were very large—half-way between a wasp and hornet; they were not satisfied with my fruit—and I had a splendid crop of Peaches and Nectarines, but my Apricots

failed; but they attacked my bees, and destroyed ten hives, that contained fully three cwt. of honey, and we could not drive them. I found four nests in our vicinity, which I completely destroyed with boiling-water. Two of them I did not find till after the mischief was done; they were enormous nests, and prodigiously strong and fierce, and we were severely stung.

I perceive, in the recent numbers of THE COTTAGE GARDENER, mention is made of glass coverings for walls clothed with Peaches and Nectarines, and in the one of the 15th of September, under the head of Heaton Park, Mr. Appleby states that it is used in autumn to ripen the wood; in spring to protect the blossoms; and in another place remarks, they secure the fruit from the attacks of the large fly and wasp. The inference deduced from the latter observation is, that they must be kept on all summer, and quite closed in.

Now, I have applied glass thus—to dwarfs trained on my hot wall (where the ants formerly were)—I have fixed hotbed frames, four feet wide, seven feet long, screwed together by small iron plates, close to the wall at the top, and fixed into a small weather-board, to prevent wet dripping, or rather dripping, inside, and going down the wall in an angle; that at the bottom indicates eighteen inches, where they are fixed into a spar, upon posts eighteen inches from the ground, which is open, as are the sides where the shuts finish, when they come to a rider-tree, which I could not, without great difficulty, cover from the top, it reaching the coping of the wall, which is fourteen feet from the ground. The outward air has, consequently, free access to the bole of the tree for eighteen inches, and at the sides, as aforesaid, which some parties hereabouts, who profess great science, say is desirable; but I want a better opinion than their's, and which I know I can obtain through the medium of your valuable work. I leave my trees uncovered till the time for the buds bursting in the end of February, or as the weather may be, keeping the glass on till the fruit has passed the ordeal of "stoning;" and, certainly, this year, of Peaches and Nectarines, I had a splendid crop of fruit. The long branches of a Greengage Plum I had trained into the branches of one of the Peach-trees, and the fruit so protected was delicious.

Now, I have another wall (not heated), upon which I have a Moor Park Apricot, an Orange ditto, a Barrington, Acton Scot, Noblesse, Royal George, Peach; Red Roman, and Elruge, Nectarine; dwarf trained, due south aspect. The wall is certainly not damp, still it has, in places, green moss upon it. The wood on the trees does not ripen as it should do, all but the Apricots, and you are aware they will not bear forcing. I have glass as aforesaid; they also do not crop as they should do, except the occasional blight to a few odd branches or shoots, and to which Peaches and Nectarines, especially the former and Apricots, are liable; the trees are most luxuriant, fine, well-grown wood, not a water-shoot in all the trees. Yet they are evidently not all right, or they would yield more produce, being at full bearing age, planted carefully on a well-drained border, with rubble bottom. I cannot, by any means, heat the wall, therefore, would it answer to paint it black, as an absorbent of heat; or should the wall be boarded with black, highly-varnished board, or should the wall be trellised; or should the glass be applied this autumn; and if so, for how long?

Then, I have against some black, varnished boards, south aspect also, three Fig-trees—Brunswick, Black Ischia, and Brown Turkey. I can glaze them, with eighteen inches open at bottom, and open sides, which I kept on all last winter, and all summer, but had few fruit. Should they be kept open all winter, and just glazed like the Peach, &c., trees in spring? and should the space at bottom and sides be closed? As is said on a lawyer's "brief,"—and I have no doubt you would wish this letter had been "more brief"—Your kind opinion on these points, is, at your early convenience, respectfully requested.—X. Y. Z.

[We are much obliged for the mode of destroying ants. We forget, just now, the remedy proposed in 1852. Strong lime-water we have found will drive them away. Sugar and water, mixed with arsenic, will kill them fast enough, and honey and water will trap them.

We are very much indebted for, and pleased with, your plan for covering walls with glass. We had a good crop of

Peaches on the open walls, but few or no Apricots. When Mr. Appleby lately adverted to these glass-covered walls, or narrow houses, as useful (among other greater matters) for keeping flies from the fruit in summer, our impression was, not that there would be no openings for air at that period, but that these openings would be covered with gauze, Nottingham netting, &c.

We do not see, clearly, the mode you adopt with your heated wall, fourteen feet high, and clothed with standards and dwarfs, unless it be that you cover the wall only to the height that the seven-feet sashes will reach, fixing the top to a weather-boarding on the wall, and the lower end to a rail on posts eighteen inches from the ground, and eighteen inches from the wall, and having as many sashes in one place as would reach from standard to standard. Now, if this is the plan, it is of importance to know the distance from standard to standard; in other words, the length of glass fixed which you have found to answer so well, with the means of admitting air solely at the bottom and the sides. We can easily conceive how this will answer very well, when the width of three or more sashes of four feet are thus fixed together, though we should think, judging from analogy, that double that number of sashes, fastened together, would be apt to scorch the trees near the top of the centre of the enclosed space. In all large spaces there must be means for heated air escaping, as well as fresh air being admitted. We have thought of a simple mode of so using some old sashes, but every year, when the time comes, this plague of bedding-out plants requires every bit of them. The plan was to fix an iron pivot, top and bottom, in the rail, in the centre of each sash; put that pivot into a hole in a board at the top, and the pivot at the lower end into a hole in a rail on posts at bottom, and then the sashes could be kept in a plain, by means of hooks and eyes, or moved inwards or outwards, so as to admit air, and keep in any position with a pin.

In the circumstances, you, no doubt, acted correctly, in covering only when the buds were bursting, and removing after stoning; but we conceive, that where there are no heated walls, much advantage would be gained by placing the glass on in autumn, to keep off, so far, autumn rains, and thus hasten the maturing at the expense of the growing principle.

This, therefore, even now, would be our advice respecting the trees on the wall, unheated, and which do not seem to ripen their wood, though it looks kindly; but, probably, just touching the points of their roots would also be an advantage in stopping growth, and causing the buds to be more matured; but this would have been more advantageous a month ago. We would keep the glass on these until the leaves got yellow. In fact, were the glass covered with any opaque substance, such as whitening, after the leaves fall, so as to prevent the sun heating the wall, the sashes might remain on, and thus keep back the budding season in spring, washing off the matter, or removing the covering from the glass as the buds swelled.

We have no idea of trellissing in such circumstances, as a remedy, a draft is made behind the shoots, and thus the trees lose much heat when most desirable.

We have, also, very little faith in the efficacy of black walls; unless where moist heat is required, there are means taken to prevent radiation. A dark colour becomes suddenly heated, and, if exposed, as suddenly cooled. After trying several experiments, we think, that for general purposes, there is little, if any thing, preferable to the common brick; it absorbs heat somewhat slowly, but then it parts with it slowly.

Figs, when the wood is well ripened, may be kept in the dark as well as in the light, if free from frost, until the buds begin to push. Did the frost do them no injury under the sashes open all round?

We are, however, inclined to think that something in the wood, or roots, was more at fault than your treatment. Suppose you merely protect the shoots from frost this winter, and cover in spring, leaving the cover on all the summer, with plenty of air at top, even if you should reduce it below, and report the results, which we can assure you will give pleasure to many. Let us have a hint how you manage so many frame-lights, when most of us are obliged to hunt them up for their more usual, but, I am

sure, scarcely more legitimate, purposes. Of course, in very severe weather, you could easily cover the openings both at bottom and sides of your structures. Whatever mode may be adopted, ventilation must prove an essential.—R. F.]

DORKINGS AT THE REIGATE POULTRY SHOW.

(From a Correspondent).

THE Reigate Poultry Exhibition took place on the 1st and 2nd instant, at which above 400 pens of Poultry were brought together for competition. Of all places in the county, for railway accommodation, none is more convenient than Reigate, especially as it is understood the Exhibition will be in future held nearer to the "Junction Station." Its locality is six miles from the town which gives the name to the celebrated *Dorking Fowl*, so fast gaining in public estimation; and is within easy distance of that district of Sussex, to which all the best birds exhibited in various parts of the kingdom owe their origin. (See *POULTRY BOOK*, part iv. page 126). In this district, too, the cottagers and small farmers are universally breeders of *Dorkings*, and depend, in a great measure, on their fowls to pay their rents. With this fact in view, the committee judiciously admitted the cottagers to compete for prizes without payment for their pens; and, by the liberality of a generous individual, a sum was placed at their disposal to be awarded to Cottagers, according to the merit of their respective pens. Under such circumstances, we had good reason to expect, particularly in this class, a display of fowls of the highest order; and in this expectation the most fastidious could not have been disappointed. Sixty-seven pens of coloured *Dorkings*, and twenty-two of white, were entered; and they were, generally, of a character which might challenge competition at any exhibition in the kingdom. Admirable, however, as was this class in general, one amateur superseded all his competitors. The Rev. J. Boys, of Biddenham, in Kent, whose fowls attracted so much attention at the Metropolitan Show, in July (twelve Prize Chickens being sold at the auction for £34 5s.), exhibited, on this occasion, five pens of his fowls, which attracted universal admiration, as well of the amateur, as of the breeders and poulterers of this poultry district. To these were awarded *all* the first prizes (four), and one second; and certainly a more beautiful collection of *Dorkings* was never exhibited by one individual. In the other classes, also, were displayed many choice fowls, but we confine our observations more particularly to the *Dorking* class, in the hope that this Society will no longer confine their exhibition to a particular district, but that, with special reference to their own bird, now in universal requisition, they will open it to the whole kingdom; and that thus it will become one of the most efficient societies, especially attractive to distant amateurs, as affording them the opportunity of obtaining choice stock birds. This expectation has already had its influence, in inducing cottagers, and other breeders, to pay more attention to the selection of their own stock fowls; and thus, as is generally the case, the public will reap great benefit, whilst they are giving assistance to others who most require it.

THE LAND'S-END, AND ITS AGRICULTURE.

THE cultivation of the granite formation upon which the soil around the Land's-End rests is primitive and careless. The soil, composed of the slowly-decomposed granite, is not only naturally fertile, but, aided by the warm moisture of the climate, the grass is very luxuriant from May until November. The parish of Senen, in which the Land's-End is situated, is held by only small farmers, whose holdings are seldom more than sixty, and more commonly thirty or forty, acres—down to five or six. Generally, four-fifths of the farm is in Grass, and that of excellent quality; the other fifth is in Wheat, Barley, and Turnips; but Grass is the favourite crop. The luxuriance of the Grass, and the rocky nature of the fields, renders the cultivation of the cereals less tempting. These rocks protrude above the sur-

face of the fields in all directions, in a very bold way. Almost everything there, in fact, is either Granite or Grass—granite houses, door-posts, window-cills, granite fences, even granite GATES. This kind of gate is formed by two granite posts, with large granite boulders piled in between; so that when they require the gate opened, it takes some hard work to lift these great stones on one side and to replace them.

There are no trees of any kind here: they say that the wind destroys them. The gardens, too, of the cottagers and little farmers, are wretchedly kept; but still the cottages look warm and comfortable. They have an abundant supply of fish; and cows, in very excellent condition, are generally kept, and well-cared for.

The magnificence of their shores, the grandeur of their granite cliffs, too, are of absorbing interest; they dip from a general height of about 300 feet at once into deep water. There is little or no beach to be found for miles around the Land's-End; and if anything of the kind does exist, it is chiefly in a few yards at the very extremity of the little coves or indentations made by the huge rolling waves of the Atlantic; and even these little patches of beach are commonly composed of a surface of large boulders, eighteen to twenty-four inches in diameter. These granite-bound coves are surrounded by huge perpendicular cliffs and rocks, in all kinds of shapes, and of the most picturesque wildness, covered with mosses, ferns, and heaths, and a kind of plant which looks something like stone-crop;* and another, which is of a broadish fleshy leaf, about the size of a florin, growing amidst the granite of their houses.†

From the Land's-End, about a mile from the shore, are the Long Slips rocks, and lighthouse; and on the verge of the horizon are the Scilly Islands and lighthouse.

C. W. J.

DISEASED PIGEONS.

THE complaint affecting J. Hewitt's Pigeons is known in London only by "going light," and "going queer," the latter being the term in vogue among the lower order of fanciers. The symptoms are a gradual wasting away to a skeleton, the excrement being green and watery until the birds die; and though they are a long while pining away, the whole time they are under the complaint they mope about, with their feathers loose and untidy, with eye half-closed, and looking wretched. This will often attack many birds at the same time, and, I believe, there is no saving them when once affected, except by an entire change of food. If the birds have been fed on beans, which is the best diet, then change at once to barley, tares, and peas, and, if possible, urge them into gentle exercise, which is the only plan I ever found of any avail, and I have tried many.

I have kept fancy Pigeons for several years, and, when they have had partial liberty, have rarely known them to be otherwise than in the highest condition; but I never gave them green food of any sort, and never, but on one occasion, in many years, knew them to eat it, and then it was lettuce leaves which I had thrown to some Pheasants, with whom (being strangers) they were joint tenants of the same aviary. I thought this a strange circumstance for tame Pigeons, though I know wild ones live for weeks on turnip shoots, and I have never noticed mine partake of the green mustard and radish tops, which I still give the Pheasants, and to which the confined Pigeons have the same access.

When newly-arrived Pigeons have been confined for a few weeks in an open aviary, they are passed to another from which they have their liberty; these are fed on beans only, but on the roof they find a composition of old mortar, loam, and salt, mixed together, to which they are very partial, and they are always in the best of health in consequence; the plumage wearing a metallic lustre, and they produce young ones in abundance.

There are many Pigeons that will not feed their young ones beyond a certain age; this often extended to when they can nearly feed themselves; in other instances, much younger. This habit is not peculiar to any one sort, though it is rare for Trumpeters, Dragons, and some others, so to

* *Sedum dasypyllum*. Thick-leaved white stone-crop.

† *Cotyledon umbilicus*. Navelwort.

forsake them; but Carriers, in confinement, are notorious on this account; and it is usual to have several pairs of feeders, to which they are successively passed. Young Pigeons are often left by the hen before they are fledged, and, if the nights are sharp, they die in consequence, even when full of food; but it is not unusual for high-fed, salacious Pigeons to go to nest, and lay again before the young ones are old enough to be thus left; so to obviate all these difficulties, it is usual to put the valuable young ones about to be placed in such a plight under more common Pigeons, who have young ones somewhat younger, and, if shifted at night, the changelings are not discovered with very delicate Pigeons (as Almond Tumblers); and in cold weather this is sometimes repeated two or three times, for the sake of warmth at night, until the feathers are well grown to protect them.

Fantails, Carriers, and some others, will often evince the greatest affection for their young until about a week old, they will then call off to nest again, and never visit the young afterwards; and this they will continue to do all through the season, consequently, you must be prepared with good and tried feeders to assume the necessary nursing. Runts, Dragons, Trumpeters, and other affectionate birds, attend to the young with every solicitude, jointly, until the hen lays again, when the cock bird undertakes the whole of the duties, except in some instances, when, if the young have left the nest, but cannot feed themselves, they will often petition the hen until she feeds them a little; and this happens during the day, when the cock is again on the nest.

You will observe, that Pigeons are not guided by the size of their young ones as to the proper time for leaving them. They appear to brood them for a certain number of days, irrespective of the state of the weather, or forwardness of the young; for instance, if you notice, at night, a pair of young, valuable Carriers, with only half a crop full of food, but partially fledged, and their mother, probably, standing over her first eggs of the next nest, then remove these to the place of a younger and less valuable pair, by which they will obtain an addition week's nursing, and thus save them. It is experience only that can teach the breeder what birds to retain as the best feeders, and those who will require feeders, for many of the most valuable birds will bring up their own young ones, while others are too weak, too salacious, or too careless, to properly attend to them, and for whom, if it is desirable to rear their young, it is necessary to provide substitutes.—C. H. B., *Knip Cottage*.

THE CARRIER PIGEON.

"THE Carrier is larger in size than most of the common sorts of Pigeons: I measured one, the other day, whose length from the point of the beak to the extremity of the tail was fifteen inches; this, though not one of the largest, weighed nearly twenty ounces. Their flesh is naturally firm, and their feathers close; when they stand erect upon their legs, their necks being usually long, there appears in them a wonderful symmetry of shape beyond other pigeons, which are generally crowded on heaps.

"The upper chap of the bill is half covered from the head, with a naked, white, tuberous, furfuraceous flesh, which projects or hangs over both its sides on the upper part nearest the head, and ends in a point about the middle of the bill; this is called the wattle, and is sometimes joined by two small excrescences of the same kind on each side of the under chap.

"This flesh is in some Carriers more inclinable to a blackish colour, which is generally the more valued.

"The eyes, whose iris, or circle round the black pupil, is generally of the colour of a reddish gravel ["MAYOR, p. 86. 'But should be a fiery red.' GRIFFIN, p. 61. 'Of a red brick-dust colour'], are equally surrounded with the same sort of furfuraceous matter for about the breadth of a shilling; this is generally thin when it spreads wide, and is most valued, yet when the flesh round the eye is thick and broad, it shows the Carriers to be of a good blood that will breed very stout ones.

"This bird is often esteemed, by the gentlemen of the Fancy, as the King of Pigeons, on the account of its beauty and great sagacity; for which reason Mr. Hickman, a dis-

tiller in Bishopsgate-street (not of the family of the lying Hickmans), when living, always kept a silver hatchet and block, on which he decently chopped off their heads, alleging that, being of the blood royal, they ought not to die after the same manner as the vulgar herd.

"A Carrier is generally reckoned to have twelve properties, viz.—

"Three in the beak.

"Three in the wattle.

"Three in the head.

"Three in the eye.

"To begin, therefore, with the first—the properties of the beak are to be long, straight, and thick.

"As to its length, an inch-and-a-half is reckoned a long beak, though there are very good Carriers that are found not to exceed an inch-and-a-quarter.

["In MOORE's day an inch-and-a-half was reckoned a long beak, although at this time there are beaks that would measure one inch-and-three-quarters, and some few two inches; it is infinitely better to have a beak one-inch-and-a-half in a right position, possessing the properties, straight and thick, than have a beak upon which tricks have been played when young, and coaxed to the length of two inches, and spindle beaked. The experienced fanciers are aware how some measure, as I said before. Position, thickness, and straightness of the beak, causes the admiration of fanciers; if you refer to the portrait of the Carrier accompanying this work, you will find the beak two inches full, and, if measured from the back of the head to the end of the beak, nearly three inches, understanding that in some parts of the country they measure in this way.]

"The straightness of the beak adds a wonderful beauty to its length, and, if otherwise, it is said to be hook-beaked, and is not so much esteemed.

"The thickness of the beak is likewise a very great recommendation, and if it fails in this point it is said to be spindle-beaked, which diminishes something of its value.

["GERTIN, p. 63. Beak a black colour.]

"The next three properties are those of the wattle, which ought to be broad across the beak; short from the head towards the apex, or point of the bill, and tilting forwards from the head; for, if otherwise, it is said to be pegg-wattled, which is very much disesteemed; and, therefore, some people, to impose upon mankind, and enhance the price of an indifferent bird, have artificially raised the hinder part of the wattle, filled it up with cork, and wired it in with fine wire, in such a manner as not to be easily perceptible, especially to gentlemen who are not adepts in the Fancy.

["MAYOR, p. 82. 'To impose upon the ignorant.']

"We come now to consider the properties of the head, which are its length, its narrowness, and its flatness. When a Carrier has a long, narrow head, and a very flat skull, it is much admired; and, if otherwise, it is said to be barrel-headed.

["MAYOR, p. 82. 'With a hollow impression or dent in the middle.']

"The last three properties are those of the eye, which ought to be broad, round, and of an equal thickness; for if one part of the eye be thinner than the rest, it is said to be pinch-eyed, which is deemed a very great imperfection; whereas, if it has the contrary properties, it is said to have a rose-eye, which is very valuable.

"To these, some add the distance which is between the hinder part of the wattle and the edge of the eye; but I cannot allow this to be a property, because, when a Carrier comes to be three or four years old, if the eye is broad and the wattle large, they must of necessity meet; the distance therefore seems to be rather a property of the Horseman, of which more in its proper place.

"Another distinguishing mark of a Carrier is the length and thinness of its neck, which some call a property; and, indeed, it must be allowed to add a very great beauty to this bird, especially considering the breadth of its chest.

["MAYOR, p. 83. 'The broader the chest the better, for which reason the head should incline backward, which shews it more advantageously.']

"Its feather is chiefly black or dun, though there are likewise blues, whites, and peds of each feather, but the black and dun answer best the foregoing properties, yet the

blues, and blue peds, are generally esteemed for their scarcity, though they will not usually come up to the properties of the foregoing feathers."

"According to Mr. MOORE, a Carrier is reckoned to have twelve properties, &c. and all in that small portion of the bird—the Head; allowing no property to test the Carrier by that standard, laid down with regard to the wonderful symmetry and elegance of shape; although, in former times, it was called, by the Gentlemen of the Fancy, 'the King of Pigeons,' for its elegance and sagacity. An umpire, unequal to the office he was filling, might award the prize from a general appearance of the bird (its elegance and symmetry of shape) although it was not laid down as one out of the twelve properties to test the Carrier by, and I think we are greatly indebted for the judicious remarks of MAXOR. After all, my brother Fanciers, I will be candid, and inform you, that I do not believe the Carrier to be an original bird, but bred up to the highest possible pitch, by the Fancier, from the Horseman—when at this high pitch, or standard, then it was called a Carrier, nor is it possible to prevent the degeneration by any art whatever, which I shall endeavour to prove when I come to the Horseman.]

"[MAXOR, p. 84. But in my opinion, the above twelve properties would be better, and not so liable to be confused, if they were reduced to five properties, viz.—

"1st. The Beak.

"2nd. The Wattle.

"3rd. The Head.

"4th. The Eye.

"5th. Length and thinness of neck, and length of body.

"But as the gentlemen of that Fancy have not yet taken upon them to fix a proper standard, as has been done for the Almond Tumbler and the Pouter, the above is submitted to their consideration. The reducing the twelve properties to five simplifies, and is generally adopted by the Gentlemen of the Fancy who are appointed to the office of Umpire.]

(To be continued.)

TO CORRESPONDENTS.

CINERARIAS (C. J. A.).—You have a dozen seedling Cinerarias, and have kept them in a window facing the sun, and instead of flourishing, and, as you expected, showing flower, they are very unhealthy. Any grower of Cinerarias would have anticipated this. Your treatment, as far as you have described it, is decidedly wrong, and this is not the season to set them right. All you can do is to repot them, rubbing off part of the old soil, and set them in a cold frame for a time; or, if you have not that convenience, place them in a north window for a month, till they make fresh leaves and growth. Watch for green flies and destroy them. Cinerarias require, during autumn and winter, the coolest treatment—36° to 40° of heat are sufficient. In fact, any low temperature, not actually at the freezing point, will suit them.

DAILIAS, RATS, AND ROSES (Scintillas).—We never heard of rats destroying Dahlias in winter stores; nor of Roses being killed with too much rotten dung. We, ourselves, once planted some Rose-trees on a heap of dung, thirteen yards long, five yards wide, and four feet deep, without one single particle of soil, and they succeeded wonderfully, as long as they could be left; but, no doubt, some kind of fresh dung would kill anything, and if the holes made in the stony clay for your Roses will hold water, your Roses certainly will be killed, sooner or later. If the water drains readily away, never fear, for over-rotten dung all Roses delight in.

LANTANA CROCEA (Parson's Wife).—You are, unfortunately, too late; but try and save a couple of the old plants; prune them close to the hard wood, and shorten the whole plant; pot them in leaf-mould, sand, and light loam, and keep them fully as warm all the winter as a Geranium in growth. Force young cuttings from them early in March, in a cucumber-bed, and the young plants will be fit for the bed early in June. August is the right time to make cuttings of these bedding *Lantanas*. Did you ever try *Lantana Sellowii* for a bed? Three-year-old plants of it do best, and it makes a pretty bed indeed.

RHODODENDRONS, AZALEAS, HEATHS, AND CONIFERS (H. B.).—The following are twelve kinds of well-marked varieties of *Rhododendrons*, which you can buy at, or under, three shillings a piece—*Bicolor*, *Album grandiflorum*, *Candidum*, *Chandler scarlet*, *Everestianum*, *Guttatum*, *Hymenanthiflorum*, *Jacksonii*, *Luciferum*, *Macranthum*, *Pictum*, and *Splendidum*. For six very good, hardy *Azaleas*, take the Ghent ones, such as *Amabilis*, *Aurea splendens*, *Ne plus Ultra*, *Candidissima*, *Calendulacea coccinea*, and *Speciosissima*. Six of the best hardy *Ericas* you might pick up on the hill behind your house in North Wales; but if you would rather pay for the feather of a far-fetched bird, take *Herbacea*, *Stricta*, *Virginea rubra*, *Mediterranea*, *Vulgaris aurea*, and *Vulgaris dumosa*. We saw nine kinds of *Heaths* on Chobham Common, and we keep them purposely out of this list, although just as good as any in it. For six "most graceful Conifers," at a low figure, take *Abies Douglasii*, *Pinus insignis*, *Araucaria imbricaria*, *Cedrus deodara*, *Cryptomeria japonica*, and *Cupressus macrocarpa*, alias *Lambertiana*.

FRENCH BEANS AND STRAWBERRIES (T. W. L.).—First-rate gardeners favour their earliest *French Beans* and earliest *Potatoes* on the dinner-table on the first of January; and next morning they move the

earliest *Strawberries*, that are to be, from their winter quarters into a *somewhere* that is kept a few degrees warmer than a cold frame; but, judging from surmises, we would venture to suggest the 20th of next March as the most fitting time for you to begin *French Beans* and *Strawberries*. We once knew a superior forcing-gardener, who once made a great mistake, by boasting among the craft, at a public dinner, that his earliest beans were always ready for the Christmas dinner. "Sure enough, then," said an Irish gardener, opposite, "my early beans are always a twelvemonth, all but seven days, earlier than yours."

PILLAR FUCHSIAS AND PILLAR GERANIUMS (Ibid.).—Take a two-year-old *Fuchsia* of the strongest kind, cut it to the surface of the ball, shake all the soil from it, but do not cut many, or any, of the old roots, only the small fibres, pot it in a good, rich, light compost, and after watering, plunge it into bottom-heat of from 75° to 80° in a close place; let six or eight shoots from the *stool* rise two pairs of leaves, and rub off the rest, if more come. Now select the strongest shoot, and stop the rest, but do not cut them all away, as some foolishly do. Keep the centre shoot going, in heat and moisture, as fast as it will grow, till the flower-buds appear by the end of next April; and if the bottom threatens to be bare of shoots for a yard or so, let two or three of your reserve suckers grow so long as to cover the naked parts. The height of the pillar will be proportionate to the kind, and to your skill in filling-up the details of management. *Geraniums* must only be grown as standards the first year; the side-shoots will form the pillar afterwards; grow them also in heat.

COLOUR OF SHANGHAE'S LEGS (G. G. Spencer).—Regarding the yellow leg as a specific feature in the *Shanghae fowl*, we should certainly consider the fact of that member being "white" as a fatal bar to distinction in the prize-list.

VARIOUS (Philantho).—You wish for creepers suitable for the back wall of a conservatory, twelve feet high, but no artificial heat. You do not say how long it is. Nothing very tender will do in such a place. *Jasminum revolutum*, yellow and sweet; *J. gracile*, white and sweet; *Pussiflora corulea*, blue; *Clematis corulea*, blue. The rest are strong-growing, rather herbaceous in their character; put down in the order in which they will bloom from spring to autumn:—*Maurandia Barclayana*, purple; *M. Hendersonii*, pink; *M. alba*, white; *Rhodochiton volubilis*, dark purple; *Tropaeolum pentaphyllum*, orange, red, and green; *Lophospermum erubescens*, rose-coloured; *L. Hendersonii*, carmine; *L. spectabile*, variegated; *Eremanthus scaber*, orange. Again, *Fuchsias* would soon cover such a wall, or *Scarlet Geraniums*, and either, by being kept dryish in winter, would prevent injury, except from very severe frosts. Good lists have already been given of creepers for green-houses, but they would be unsuitable for a conservatory without heat, as the finest things might all be worthless after a night's frost. White and black *Vines*, for such a house, are—*Black Hamburg*, and *White or Royal Muscadine*; but if you give the heat from sun the *Vines* would like in summer, it will be too much for herbaceous climbers on the back-wall. Were it not that you object to *Camellias*, they would do better than anything else, as they would stand cold in winter and heat in summer.

FUCHSIA SERRATIFOLIA (Ibid.).—This will bloom in winter. See an article to-day by Mr. Fish. You ask for the "Handsomest and best ever-green creeper for the east end of a cold conservatory, against which you have a rock-work, with three feet of water playing spray fashion over Ferns, both British and foreign." We fear, that in your case, we are carrying "salt to Dyabot," and "shoes to Northampton." But what do you mean by cold? Do you use fire-heat, or not? We can place ourselves just looking at your rock-work, and if it had been out-of-doors, we would have been tempted to cover the wall with a huge bush of double *Whin* or *Furze*. As it is in the house, and if not heated, we would try *Soliva heterophylla*, which is very interesting with its pretty blue flowers; but if the house is heated, though not a climber, but easily trained, we know of nothing more suitable than the *Acacia Arnata*.

CYCLAMENS (Rev. R. M. Evans).—These, received from Smyrna, had better be potted in sandy loam, with a little peat, neither wet nor dry, and kept in that state, in a cool house, until they begin to grow, when they will want more water, and full exposure to the light.

ADDRESSES (B. W.).—Those you require are—Capt. W. W. Hornby, R. N., Knowsley Cottage, near Prescott; and Graham Vivian, Esq., Singleton, Cornwall.

POULTRY FOUNTAINS (B. B.).—There are several, but none of them deserving the price required for them. The best plan of supplying water is in a long iron trough placed behind a row of palings, through which the poultry can put their heads and reach the water.

DORKINGS (James Rollins).—The topknots at once demonstrate that your birds are not pure Dorkings.

BRITISH WILD FLOWERS (Myosotis).—It is probable that they will be published in a separate form.

SHANGHAE (A Subscriber).—You were certainly misinformed. Buff *Shanghaes*, or, as you call them, *Cochin-Chinas*, are most in request.

WHITE COME.—Chirurus, of Oswestry, says, "Perceiving a *Cochin Pullet* affected with a white scurf on one side of the face, which gave her very much the appearance of a Spanish fowl's white face, and not liking that this complaint should spread (as I understood it will) over the comb and neck, I had recourse to a remedy recommended in your pages, viz., cocoa-nut oil and turmeric, in the proportion of one drachm of the latter to two of the former; and I am glad to say, that in three or four applications she has been cured."

NAMES OF PLANTS (A. B.).—*Abies Cephalonica* and *Rhododendron Dauricum*. (A. B.) 1. *Asplenium Trichomanes*, or common Maidenhair Fern. 2. *Eucomis punctata*, Spotted Eucomis. 3. *Edwardsia grandiflora*, Large-flowered *Edwardsia*. 4. *Viburnum opulus*, Guelder Rose. 5. *Quercus robur*, Stalkless-fruited Oak. 6 and 7. Varieties of *Quercus cerris*, which we may be able to name next week.

ERROR.—At page 71, on the cost of covering walls ten feet high with glass—for £1 per running yard, Mr. Appleby says it should be £1 per running foot.

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WEEKLY CALENDAR.

M D	D W	NOVEMBER 24—30, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
24	Th	Gray Wagtail comes.	29.873—29.266	47—27	N.	—	36 a. 7	58 a. 3	morn.	23	13 5	328
25	F		29.947—29.689	54—41	S.	22	37	57	0 7	24	12 47	329
26	S	Oak leafless.	29.483—29.426	56—38	S.W.	70	39	66	1 25	25	12 23	330
27	SUN	ADVENT SUNDAY.	29.832—29.692	49—29	W.	—	40	55	3 45	26	12 8	331
28	M	Song Thrush again sings.	29.670—29.460	51—28	N.W.	08	42	55	4 9	27	11 47	332
29	Tu	Common Flat Body; gardens.	29.680—29.507	39—34	N.	—	48	54	5 37	28	11 26	333
30	W	St. Andrew.	29.954—29.783	42—25	N.	—	45	53	sets.	29	11 4	334

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 47.5° and 34.6° respectively. The greatest heat, 58°, occurred on the 30th in 1835; and the lowest cold, 16°, on the 29th in 1846. During the period 94 days were fine, and on 88 rain fell.

NEW PLANTS.

BAHIA LATIFOLIA (*Broad-leaved Bahia*).

It is chiefly by the greater breadth of its leaves, and its superior height, that this is distinguished from *Bahia lanata*, and there seems small reason for separating them from the very descriptively-named genus, *Eriophyllum* (Woolly-leaved). Indeed, *Bahia lanata*, in many botanical works, is to be found described under its synonym, *Eriophyllum cespitosum*. They belong to the Natural Order of Composites, and to the *Syngenesia superflua* of Linnæus.

B. latifolia is an annual, and native of California. Stems branching and woolly; leaves covered with a cobweb-like down. Flower-heads solitary, on woolly stalks; florets of the ray from twelve to fourteen, broad, deep yellow, and handsome.—(*Horticultural Society's Journal*, viii. 319.)

SCHIZANTHUS VIOLACEUS (*Violet-coloured*).

This does not seem to be botanically distinct from *S. pinnatus*, but it has been specifically named by M. M. Vilmorin, and is a good hardy annual. It differs from *S. pinnatus*, and *S. Hookeri*, by having no yellow stain upon its flowers.—(*Ibid*, p. 320.)

AZALEA CRISPIFLORA (*Crisp-flowered Azalea*).

By *crisped* is meant that the edges of the petals look as if they were uniformly small-plaited. This is a very showy shrub, introduced from China by Mr. Fortune, and raised by Messrs. Standish and Noble, of the Bagshot Nursery. It flowers in April, requiring the shelter of the greenhouse. The petals are of a deep rosy colour, or crimson.—(*Botanical Magazine*, t. 4726.)

SEMEIANDRA GRANDIFLORA (*Large-flowered Semeiandra*).

It cannot be better described than as a *Fuchsia* with distorted flowers. It belongs to the Natural Order of *Onagraceæ*, and to *Diandria Monogynia* of Linnæus. Sir W. Hooker thus writes of it (*Botanical Magazine*, t. 4727):—"A remarkable genus, allied to *Fuchsia*, with singularly-formed flowers of a bright scarlet colour; the coloured calyx constituting the principal portion of the flower. Native of Mexico, first detected about Tepic, by the Naturalists of

Captain Beechey's Voyage in H. M. S. *Blossom*, and described in the Botany of that Expedition. It was again



found in the Sierra Madre, on the road from Mazatlan to Durango, by Mr. B. Seemann, who transmitted to the Royal Gardens the seeds from which the plant represented in our plate have been raised. '*The Semeiandra grandiflora*,' says Mr. Seemann, 'grows in the temperate regions of North-western Mexico, at an elevation from 4,000 to 5,000 feet above the ocean, among Galphimias, Tupas, Cupheas, and Lobelias. It is a slender shrub, about six feet high, and its bright scarlet blossoms render it a desirable acquisition to every garden. When I met with it, towards the end of 1850, it was both in flower and fruit, making it probable that it flowers more or less throughout the year.'—With us (in Kew) it began to show its blossoms in March, 1853."

It is not a little singular, that the question of the comparative value of Quince stocks, and those called free stocks, or, in other words, stocks of the wild Pear, should have been constantly before the public for a century or more, and not yet by any means be settled. Even in the days of London and Wise, as we find in their edition of *De la Quintinye*, dated 1710, the use of both Quince and Wilding are respectively recommended, according to circumstances, the recommendations professing to be backed by long experience. Thus, at page 50, it is said of "*La bon Chretien de Hyver*"—"It should be grafted on a Quince stock, because, on a free stock the fruit grows spotted, small, and crumpled." Again, of "*La Bergamot*"—"If the ground be good and light,

they do best on a free stock; but if cold and heavy, on a Quince." Here we see a recognition, in *those days*, of the adaptability of the Quince to moist and adhesive soils. Again, at page 57, of "*La St. Germain*"—"It does best on a soil moderately moist, and on a free stock."

Here, then, we have a sort of antagonism in principle. That many persons have tried the Quince stocks and failed is notorious; and that some have succeeded is equally true; but, then, in the former case, let us ask, has the stock itself been done justice to?

We long since attempted to show, in the columns of THE COTTAGE GARDENER, that the man who tried to cultivate Pears on the Quince, on soils adverse to the

growth of the Quince, was proceeding on a fallacious foundation. We have all seen the common *Red Currant* luxuriantly growing on a warm and sandy bank, and producing fruit liberally and fine; but who would think of grafting a *Red Currant* on a *Black Currant* stock, and planting it on a dry soil?

In the present state of science, as bearing on the relation the root has to the branch, and on the influence of the latter in altering the functions of the latter, we do not think any man can suppose that it is in the power of the branch so to modify the action of the root as to totally change the natural habits of the stock on which the species or variety is grafted. However, setting aside scientific considerations, a more common sense view of the subject might almost be presumed to settle the question. Until, then, the public better understand, or better consider, this question, it will be well, for those who feel puzzled, to grow Pears on the ordinary stock. Be it understood, however, that we do not hereby desire to condemn the Quince; on the contrary, we think, that, for certain kinds, under certain circumstances, it may be used with much advantage; but who is he that can give us all the information we require to thoroughly settle the question? To be sure, writers affirm, with all apparent confidence, that this kind should be on the Quince, and that on the Pear; but we must confess that we have found great disappointment in such recommendations; and many are the complaints that have reached us from suffering amateurs, who, taking their cue from glowing accounts of the wonders performed by the Quince stock, have at once stocked their new garden—their first attempt at gardening, perhaps—with these fancy things with their highly Frenchified names.

We hope not to incur the displeasure of those who have a leaning towards the delightfully-euphonious sounds of some of the French names given by our more volatile neighbours to fancy Pears; for, if the flavour be excellent, and the kind profitable, we should have no particular objection to a Pear if it had as many names or titles as a Spanish grandee. They certainly shew more taste than our Lancashire Gooseberry men, with their "Top Sawyer," "Roaring Lion," "Jolly Angler," &c.; but John Bull is a rough fellow, and almost untamable.

We must here beg to state, as our decided opinion, that where the treatment, from the seed-bed, or sucker, upwards, is what it ought to be, with our Pear, or wild stock, this stock will prove sufficient for every purpose, except for pots; and, indeed, for all other modes of culture, we think them superior altogether to the Quince. This we offer as an opinion; one, perhaps, that may not be pleasing to Quince-stock men. But that matters not; our object is truth.

We well know, that of all the gardens we have seen, and they amount to many hundreds, we cannot call to mind half a score in which Pear culture was carried on upon a sound basis. We do not mean to impute neglect to any of those cultivators, though such may have occasionally been the case. We mean to say, that Pear

culture seemed less understood than the culture of any other fruit

Mr. Beaton, in his report of the Regent-street Meeting, held at the Society's Rooms, on the 18th of October, says,—“Here I tasted some of the best October Pears; at least, I tried to do so, but there was no taste, that I could make out, at all; but, as it is some consolation to know that we are not alone in a dilemma, I must mention, that Mr. Solomons, of Covent Garden, exhibited splendid-looking Pears from the South of France; but they were not a whit better flavoured than if they had come from the haughs of Cromdale.” As a set-off against such fruit, we may observe, that the Pears at Oulton Park have been highly admired by all who have seen them; finer crops, or higher-flavoured fruit, were never grown there. It is of no use gratuitously to imagine that finer weather was there than elsewhere; the terrible accounts of their hay harvest, and the late state of much of the cereals, would speedily negative this idea. Indeed, a summer, if such it must be called, was never known there so difficult to deal with. They began using the *Délice d'Dardenport* Pear, from a west aspect, in the early part of October. These were delightful, indeed; of the most melting character, with a slight degree of scent, or muskiness; and the finest in texture of all our Pears at present. On the heels of these, and close, too, came *Williams' Bon Chretienne*, *Althorp Crassanne*, *Fondante d'Automne*, *Suffolk Thorn*, *Duchesse d'Angouleme*, *Louis Bonne of Jersey*, *Marie Louise*, and *Beurrée d'Amanlis*.

We must needs point to the *Suffolk Thorn*, a Pear which deserves high commendation; at least, we can afford to give it such, especially as it succeeds perfectly in Cheshire as an ordinary standard, and is of first-rate character; thus, in the worst of summers, it is a great bearer—quite melting, very juicy, flesh fine, and is much like the old *Gansel's Bergamot*, from which, it is stated, the late Mr. Knight, of Downton Castle, raised it. It is in use from the second week in October until November, and we beg to recommend it to all our friends, at least, those of the north.

As to the other kinds here named, they have been full-sized, and their flavour excellent; the *Althorp Crassanne*, and the *Williams' Bon Chretienne*, were gathered a long while before ripe, as they always should be, and were delicious.

Returning to the matter of stocks, let us hint at the reasons why Pears on the free stock so often succeed badly. The wild, or free stock, by nature, is inclined to make deep roots, and deep roots are ever averse to a thorough ripening of the wood. And why? it may fairly be asked. The answer is, that deep roots imbibe a too-copious and constant supply of moisture, and that, too, at periods when a degree of mellowness, if not of partial dryness, is of the utmost importance. It is of the utmost importance that Pears cease to grow, or, rather, to elongate in the young shoots, by the end of August; after which period, the powers of the tree should tend to concentration rather than dispersion. That this concentration, or accumulation, of the pre-

pared sap is beneficial in enhancing both size, quality, and colour in the fruit, is amply proved by the effects of ringing; by which means a preternatural supply is arrested above the ringing point. In such cases, not only the fruit, but the young wood and the embryo bloom-buds become altered in condition, albeit, at the expense, in some degree, of the longevity of the tree; here, however, there need be no cause for alarm, as the Pear is naturally so long-lived as to make this point totally unworthy of consideration.

We think, too, it may be safely inferred, that the *temperature* of the ascending sap is a matter for serious consideration. Surely, the moisture absorbed by roots at three feet in depth, cannot be precisely the same, in this respect, as that absorbed from within a foot of the earth's surface! The soil at the former depth being, probably, in July and August, about fifty degrees, whilst that within a foot is nearer to seventy degrees: surely both cannot produce *precisely* the same results!

However, it is a well-known fact, that whatever the merits of the Quince may be as a stock, the Pear-stock will succeed, in ninety cases out of a hundred, without preparation; whilst of the Quince, probably not twenty would suit. The *deep roots*, then, got rid of, we have little doubt that the ordinary stock would suit well the majority of cases. And how shall these deep roots be got rid of? If right in our antecedents, this will be a small difficulty. Frequent transplantations, beginning from the very seed, sucker, or layer, of the stock, and *station planting*, according to the maxims *first made patent* through the medium of THE COTTAGE GARDENER, offer, in our opinion, the only solid chances of success. The rest, we fear, is all "but leather and prunella."

R. E.

WE certainly had imagined that the published prize-lists for the Poultry Shows of the present year had made sufficient reference to all the necessary details of management. Great, therefore, was our surprise to find that the one put forth by the "Essex Association for the Improvement of the Breeds of Domestic Poultry," commenced with the notification that we now place before our readers.—"The following list of prizes is issued, conditionally, on the amount of receipts for subscriptions and admissions to the Show realizing a sufficient sum to pay the proposed premiums, after the necessary expences of the Exhibition have been provided for; and in the event of such a sum not being realized, then the surplus, after payment of expences, will be divided amongst the prizes in a proportionate rate."

It is the part of prudence, doubtless, to calculate well, beforehand, the probable receipts and expenditure of such institutions; but surely all this should be preliminary, and not subsequent, to the formal issue of the prize-list; when it is but fair to suppose that the Exhibitor, who incurs the trouble and expense of preparing his birds for the show on the offers there held out to him, has a positive right to expect their strict

fulfilment. This, however, becomes, we should imagine, a positively legal claim, when, by an actual payment for the entry, a consideration is given for the chance of the premium.

Few, we believe, would contest the manifest right of the Exhibitor who has complied with all the requisite conditions to receive, if successful, the full amount of the prize originally published; but we would go somewhat further, and would endeavour to persuade the managers of the Essex Association of the great impolicy of their proviso, for, surely, thus to anticipate failure, is nothing less than stepping out of their way to court its unwelcome presence. Numerous as have now become such Exhibitions, no want of success has yet reached our ears, wherever ordinary attention, and a business-like system of conducting the various details of the arrangements has been had recourse to.

The "N.B.," at the close of this same list, is certainly original; it runs thus:—"In the event of the entries for the Exhibition not being considered sufficiently numerous to insure the success of the Show, if held on the days named, the Committee reserves to itself the right of postponing the Exhibition to some future opportunity; in which event the entrance fees will be returned to intending Exhibitors, in due time, before the day named for transmitting their specimens." Truly kind and considerate on the part of the Honorary Secretaries, but, unless we are greatly in error, few persons will be satisfied to keep up their birds, declining to send them elsewhere in anticipation of their appearance at Colchester, with the trouble, risk, and expence of packing and travelling, when it remains a matter of grave doubt, up to the eleventh hour, whether there will be any Show at all. Many Exhibitors, to whom the mere amount of the prizes already referred to would be a matter of utter indifference, will give a most decided negative to any such proposition as the Managers of the Essex Association have thus authoritatively set forth.

We should be sorry to damp the ardour either of individuals or Societies, but surely, the notifications we have referred to, as heading and closing this prize-list, stultify the whole proceeding, and an earnest remonstrance becomes our bounden duty.

Turning from the general arrangement of the Exhibition to the particular classification of the birds, the first remark that occurs to us would refer to the puddling together of the White and Coloured Dorkings in one class. Now, in every point of view, these should have stood apart. Why, again, may we ask, in the classes 13 or 14 for "Duckwing, and other Grey and Blue Game Fowls," are *three* hens and *three* pullets respectively required; while, in every other instance, *two* hens and *two* pullets are the required numbers?

Silver-Pencilled and Silver-Spangled Hamburgs must here compete together, an arrangement as unfair to the birds as onerous to the Judges, whose opinion must be pronounced on the relative merits of birds perfectly distinct from each other in several important features.

The Golden-Pencilled and Spangled Hamburgs are also treated with the like disrespect.

Malays are no favourites of ours, but from their long-standing, and peculiarly-marked specific character, should retain their place on every prize-list which professes to provide for the competition of fowls generally. A "Pencilled" Bantam, side by side with the "Laced" birds, was reserved, we imagine, for Essex sagacity to place before the poultry public. Had it been "laced or spangled," we should have thought it an error of judgment, and indicative of bad taste, to bring the two varieties into competition; but the "*Pencilled-Bantam*" is a mystery to us as a show-bird, although we have certainly seen stunted illegitimate descendants of the Golden-Pencilled Hamburgs that might possibly have passed under this name, but which, in the moments of their utmost ambition, could never hope to mount higher than the village dunghill.

Turkeys are tempted with liberal offers, always supposing that the money should come in for their payment; and, for the first time, are here divided by colour, "Black," "White," and any "other colour" having separate positions. In Turkey-keeping districts this would be a generally desirable system.

The *Hitchin and Home Counties Society* announce their Meeting for the 18th and two following days of November. With some few exceptions, the prize-list is judiciously arranged, and the premiums liberal. One of these points appears in the very outset; where Shanghaes being divided into only two classes, one for "white," the other for "coloured," it necessarily follows that "Buff," "Cinnamon," "Partridge," and "Black," must be all jumbled together; an arrangement that will meet with few advocates. Turkeys have had separate classes assigned to the young and the old birds, but we regret to observe that the same favour has not been extended to the Geese.

Premiums to the amount of £100, with silver cups in addition, have been for many months proclaimed as the liberal inducements held out to Poultry-keepers by the *Cambridgeshire Society*, whose Meeting was arranged, and published in our columns, for the 8th inst. A postponement took place in consequence of the public sale of Mr. Fairlie's poultry; and now, after the pen-money, in many instances, has been paid, as we are given to understand, a printed circular has been issued to the effect that sufficient entries for a Show had not been obtained, and that it was, consequently, again indefinitely postponed. We allude to this fact in the hope that no occurrence of so objectionable, and, so far as intending exhibitors are concerned, so unfair a determination may be ventured on, and also as conclusive evidence of the necessity for our remark on the proviso of the Colchester Society.

On one point, our observations apply alike to the proposed arrangements on which all these three Exhibitions were to be carried out, and this is the unnecessary prolongation of the period during which the fowls are to be kept in close confinement. Our objections to this unwise addition to the many risks and hazards of the

Exhibition-room have again and again appeared in these columns; our present task, therefore, need not extend beyond the mere statement of the number of days of confinement in each separate case.

At Colchester, the birds must be at the place of Exhibition before noon on the 22nd of November, and as the Exhibition remains open till the ending of the 26th, which is a Saturday, many of the birds, we fear, cannot reach home till the Monday following. At Hitchin, they must arrive on the 16th inst., and remain till the 21st. At Newmarket, they "were" to come on the 7th inst., and remain until after the evening of the 10th.

Further comments are unnecessary. Poultry may, indeed, be cheaper another season; but even then, such risks will be dreaded by owners suffering from past experience, and the Managers of Societies for encouraging Poultry, will, probably, by that time, yield their present claim to the infliction of such periods of imprisonment on their proteges.

THE monthly meeting of the Entomological Society, for November, was held on the 7th instant, the chair being occupied, in the absence of the President, by Mr. Westwood. A case of Butterflies was presented by T. Jones Stevens, Esq., of Bogota, containing many very splendid and rare species, among which may especially be mentioned, *Morpho Ganymede*, of which a single specimen only, in bad condition, was hitherto known, and that is in the collection of Dr. Boisduval, of Paris. This lovely Butterfly is of large size, with semi-transparent wings, which reflect, in certain lights, the most dazzling cœrulean blue gloss.

A curious hermaphrodite specimen of the British Hawk-moth (*Smerinthus populi*), was also presented, one side of the body, and the corresponding wings being male, and the opposite half female.

Mr. J. Curtis exhibited some very fine Beetles from Mozambique, which he had received from Signor Bertoline. Amongst them were the rare *Manticora latipennis*, and *Goliathus Derbianus*.

Messrs. Edwin Shepherd and S. Stevens exhibited specimens of a new British Moth, *Noctua sobrina*, of Herrick Schaffer, taken in Perthshire, by Messrs. Weaver and Cooper. Mr. S. Stevens also exhibited a curious specimen of the handsome Beetle, *Trichius fasciatus*, with the dark markings greatly suffused. Some curious varieties of the common Butterflies, *Argynnis paphia*, and *Hipparchia janira*, together with numerous rare Moths from the New Forest, were also exhibited by Mr. Boyd, who captured them in July and August last. Mr. Shield, of Dublin, exhibited a new Moth, of small size, *Nepticula acetosa*, reared from caterpillars feeding on the leaves of the common Sorrel; also specimens of a new *Depressaria* (*D. subpropinquilla*).

A number of beautiful Butterflies, from Nicaragua, were exhibited by Mr. S. Stevens, forming part of a col-

lection of upwards of 1,000 specimens, which had been preserved and transmitted to this country, each being wrapped in a small piece of writing paper, pressed flat, the wings having been previously folded; by this means the collection had occupied very little space, and had received no damage in the voyage, and the specimens were easily relaxed, and the wings spread out, on arriving in this country.

Mr. F. Smith exhibited some living Ants, brought from Jamaica with Orchids. They belonged to the curious species, *Odontomachus* (*O. spinosus*), and are remarkable for the great length and slenderness of their hook-like jaws, which they often kept stretched wide apart whilst running about.

Mr. Douglas exhibited some plants of *Glechoma hederacea* (Ground Ivy), the leaves of which were infested with numerous small conical, hairy galls, inhabited by the grubs of a small Midge, *Cecidomyia bursaria*, of Winnertz, which deposits its eggs in the leaves, and this causes the formation of the galls. He also exhibited the leaves of different plants showing the burrows of mining grubs of Dipterous and Lepidopterous insects, which were quite similar, although formed by such different insects; also the case-bearing larva of a *Talaporina*, taken in the preceeding week, on a fence, creeping about, being a very unusual period for its appearance in that state.

Mr. Curtis exhibited a number of British insects, of different orders, which he had found to be infested by the minute, active, parasitic larvæ of the Oil Beetle, *Meloe*; amongst them were *Malachius æneus*, *Odynerus spinipes*, a *Bombus*, and a Saw-fly, on the latter of which he had found the small, black larvæ, which had hitherto baffled all attempts to determine its species. He also stated that he had observed the body of the larvæ of a *Stylops* inclosed in that of an *Andrena*, infested by as many as 150 very minute worms, tapering at each end, which he considered as parasites upon this parasitic *Stylops*. He also exhibited an African Sand Wasp, of the genus *Ammophila*, with a *Stylops* exerted between the rings of its abdomen; and Mr. F. Smith stated that he had a foreign *Sphex* in his collection, with a *Stylops* exerted from its body, being at least three times the size of any hitherto known species.

Mr. Clifford exhibited a quantity of Pearl Barley, which had been greatly deteriorated by the larvæ of two small Beetles, *Anobium graniceum* and *Ptinus ovatus*, which had fed within the grains, and had afterwards migrated to a stock of Liquorice, which they attacked. Mr. Desvignes described a new British *Ichneumon*, which had been reared from the Reed Moths, *Nonagria typhæ* and *paludicola*. Mr. Bailey read the description of a new genus of plant Beetles, from India, which he named *Paralina*, allied to *Chrysomela*. Mr. Westwood exhibited drawings and specimens of a very minute larvæ, which he had received from Mr. Hogan, as that of the curious genus of Rove Beetles, *Diglossa mersa*, in company with which it is taken on the sands at Baldoye, near the promontory of Howth, in Ireland. He also exhibited a sketch

of a large black Irish Moth, *Oleogene Lepetieraria*, taken at Ballymena, by Mr. Templeton, and which had been recorded by Mr. Stephens, in his list of the British Museum Collection, under the name of *Dasydia torvaria*. Mr. F. Smith read some notes on the habits of the male of the curious Bee parasite, named by Mr. Newport, *Anthophorabia fasciata*, but which he had ascertained to be identical with the previously described *Melittobia Audouinii* of Westwood. It resides in the provisioned nests of different Mason Bees and Wasps, and is parasitic both on the larva of the bee and also on the larva of *Monodontomerus*, which are themselves parasites on the Bee larva. He had kept a male alive for six weeks. Mr. A. R. Wallace read the commencement of a paper on the habits of the Butterflies of the Valley of the Amazon River, describing their various modes of flight, and the different localities which they frequent.

BROCOLI-CULTURE.

(Continued from page 117.)

THE former paper, it will be borne in mind, was devoted entirely to an attempt at a classification of this family, not so much with a view to elucidate the habits and peculiarities of kinds contained in catalogues, as to show the relationship which the different classes bear to each other.

In order to understand the matter fairly, let us take a case:—A family requiring a constant succession of one or other throughout the year. I must here suggest, that we bear in mind that the whole tribe, for mere economic purposes, may be thrown into three groups, viz., the autumn, the mid-winter, and the spring Brocolis. It may, too, be observed, that there is no *set line* of demarcation between these groups, for, through the cross-breeding which has taken place during the last twenty years, or more, kinds have been produced which form very useful links in the chain, running into each other, and binding closely what was originally of rather too detached a character.

I will take up that position in the round of seasons with the gardener in which the chief consideration is, how to provide some early Brocoli to succeed the summer Cauliflowers; for although, on some good and sound soils, Cauliflowers may be produced in tolerable perfection through the summer and autumn, yet, on many soils, and especially in hot and dry summers, they are apt, through their high degree of excitability, to become so rough, tough, and defaced, and what is termed open-headed, from about the second week in August to the same period in September, as to drive the cook to prefer some early Capes, and others of that class. The true *Early Purple*, or *White Capes*, then, sown in the beginning of May, will commence turning in about the end of July, by which period what are termed summer Cauliflowers will be on the wane, or getting seedy. This Cape crop will keep up a succession for a month, at least; and if a continuance of this class is desired in regular succession, until November (after which they are too tender to be relied on), two more sowings must be made,—one in the third week of May, and a last in the second week of June, at latest.

This brings us to consider what we may do in the *Cauliflower* way for the late autumn months, for “*Michaelmas Cauliflowers*” have long been noted; and, indeed, as soon as the temperature begins to decline—say in the middle of September—Cauliflowers and their congeners will once more resume the delicate white, and

close, and fine texture, for which they are so justly esteemed.

In order to carry out a continual succession of the Cauliflower section, in which I include the *Walcherens*, *Granges's Early White*, and others of that class, I make three sowings, irrespective of that sown in August for hand-glasses, &c.,—one in the last week of April; a second in the middle of May; and a third about the end of the first week in June. From these sowings, plantings in succession may be made, which will carry on a continual supply from the early part of September to Christmas; the latter, of course, preserved in a special manner; of which more presently.

We will now suppose that our cook has been well supplied all the summer, through the medium of two sections—the Cauliflowers and the Capes—and that we have arrived at that period when “the holly bough hangs on the old oak wall.” Let us now see how the gardener provides, henceforth, a continual supply of this useful esculent. This brings me to the branching or sprouting Brocolis, which, although somewhat despised on account of less pretensions, both in point of appearance and colour, yet have for a very many years proved a friend in need; for, when those of the Cauliflower section, with their marbled faces, have become half petrifications, through retarding or protecting principles, or shrunk through long keeping, then it is that these despised little ones dare to show their faces.

With the fear of frosty, dark December, then, before our eyes, and an assurance that new kinds, with high mid-winter pretensions, may prove treacherous; moreover, knowing, full well, that our real late or Spring Brocolis must not be expected before the first mild run of weather in February; we take care to plant some of the branching or sprouting class to which I before adverted. One sowing in the middle of April, and a second in the middle of May, will just accomplish the point we must aim at.

We will next bring our ever-craving cook up to the middle of February, and we must see how to carry on a supply until the early Cauliflowers come in, which will be about the third week in May in general; and those, of course, from under hand-lights or extra protection of some kind. Here we enter on a host of competitors for the distinction; but before venturing on the late spring Brocolis, let me advert to a sort of intermediate Brocoli, which, when pure, is very valuable; I mean, the “protecting Brocolis,” so called, I presume, from their singular habit—they protect themselves. I do not vouch, of course, for the products of every paper with “Protecting Brocoli” written on it; but for such as I have occasionally received, albeit, in the form of angel’s visits. This Brocoli, when true, and sown about the beginning of April, will produce beautiful white heads, buried in a canopy of leaves; the latter point inwards so as to form a complete cap, which must be forced by violence, occasionally, to get at the cleverly-protected head. From a tolerably early sowing, such may be obtained a good while before the ordinary spring Brocoli, and are invaluable.

As to those for March, April, and May, the lists are so extensive that I really cannot undertake to say anything as to the character expected from the fine names therein contained; indeed, it would be almost useless, for every season brings out some new name; not, of necessity, new kind. It is the fashion now to append the name of the seller to them, and, in some cases, this may be genuine, if the seedsman has set his “stock grower” to work. I see no chance for the grower, at present, but to trust to the high encomiums given to them, unless he can procure a new and generally-esteemed kind from the grower and originator. It remains to observe, that those who require a supply of spring Brocoli through March, April, and May, should

sow approved kinds at three periods: say, the middle of March, and the first and third weeks in April. Now, this is not alone in order to obtain a long succession, but to provide against contingencies; for one sowing may be lost, clubbed, or subjected to other casualties.

In concluding this subject, let me advert to one point, and that is, the best mode of preserving late Cauliflowers and autumn Brocoli during the early frosts of November and December; for this is an important feature in securing a continuous supply. It has been a custom, with some of our continental neighbours, and even in Britain, at some periods, to bury the heads in peat stacks; at least, so I have been informed; and it has been stated to be effectual. This I have never proved; but the well-known antiseptic properties of peat would seem to offer one chance, in the extremity of matters, to accomplish this end. I should fear, however, that they would either become somewhat insipid, or, what would be as bad, imbibe a flavour by no means desirable in so delicate an esculent.

The pitting of Apples has been highly recommended by some, in order to prolong them much beyond their season; but, although it assuredly has accomplished such an end, it has, I believe, ever been accompanied by deterioration of flavour. I do not, however, mean to infer that precisely the same must take place with Cauliflowers and Brocoli, but merely offer the facts to our readers. The following, however, is good practice, as I have proved for many years. When the autumn frosts threaten, which will generally be in the early part of November, we at once tie up the foliage, after the manner of blanching Endive or Lettuce; that is to say, we draw up all the fresh outer leaves, and force them to protect the crown. This will save them from ordinary frosts; but if the weather threaten to become severe, this alone must not be relied on. The next best plan would be, of course, to introduce them to cold pits, or frame-work; but who can spare such, at that period, but princes and dukes?

Our off-hand practice has been to excavate a trench on a dry bottom and in a sheltered situation; a trench about half-a-yard in depth, staking down a slab on each side to support the soil. This trench is about forty inches wide, and in this we “heel” the plants “in head,” removing them with balls of earth. Some have been tied, some not; those which have been tied have their bands cut, or they are placed tolerably close together. Over the trench, crosswise, are placed sundry carriers, such as stout stakes, at about two feet apart, and a strong hook, cut from coarse shrubs or trees, secures them at each end, and saves the expense of nails and carpenters. Henceforth, then, these sunken pits are attended as carefully as a bed of early Radishes: mats are thrown over the trench every night, frost or not; and if the ice-king shows in earnest, lots of coarse litter are strewn over the whole. As to thawing, if they do become frozen, why they are managed just as gardeners manage their frozen plants: a very slow thaw, with as slow an inurement to light, are the points aimed at.

Some gardeners hang them up by their heels, in a shed or outhouse, but they soon become leathery, and possess too much of the mummy character; yet they are really Cauliflowers. I have, I fancy, now shown how a continuous supply may be kept up, with the exception of the hand-glass Cauliflowers: everybody, however, who grows these, needs little information.

R. ERRINGTON.

BULBS.

(Continued from page 99).

PHYCELLA.

This genus is composed of very beautiful flowers, all natives of Chili and Peru; at first, the species were mixed up with those of *Habranthus* on the one hand, and with *Zephyranthes* on the other, but only provisionally for a time. When the species increased, however, it was found that the group presented sufficient characters to distinguish them from these two families; and then Dr. Lindley separated them, and called them *Phycellas*, a word that we might translate into "Painted Ladies; a more literal translation is given in our "Dictionary," but I cannot help thinking that Painted Ladies was the real meaning intended by the author, upon this ground, from the *Bella Donna*, of Linnæus, to *Phadranassa*, or Gay Queen, of Dr. Herbert—that is, from first to last—most of the different groups into which Amaryllids have been divided go by the name of some celebrated woman. The author gives his translation of *Phycella* to be "a purple pigment," in fact, *rouge*, that kind of paint once used by these very celebrities to heighten their natural beauty. If one man calls up the idea of beautiful women by naming his plants after them, and another man introduces his rouge among them, can we be at a loss to understand his real meaning? and if we cannot, I see nothing for it but that *Phycella* means a Painted Lady.

We all know that these *Phycellas*, or Painted Ladies, are, indeed, the most fickle of the race; hardly enough for our borders they certainly are; but to bring them out to the full sun, I mean to flower them, is more than most people can do, especially those of them which inhabit the lower plains in the North of Chili. They have one peculiarity not common to bulbs from the Western world, their roots die annually, like those of the Tulip, the Hyacinth, and the great bulk of South African bulbs. They will, therefore, endure to be taken up when at rest, and to be preserved in sand, or in some very dry place. They ought to be taken up not later than the end of August, even if they are quite green at the time; for we have proved, in practice, that that is the turning point in their whole management by which alone any of them will flower two years running. If it comes on wet with St. Swithin they are likely to keep green, and this autumn effort at prolonged growth is certain to hinder them from flowering in the following spring and summer. At the end of February, or early in March, their new roots begin to sprout like those of the Hyacinth in November, showing clearly enough that that is the right time to pot or plant. Peat is poison to them. Naturally, they grow in poor, hungry soil, sometimes sandy, often hard and irony, and always on a hard rocky bottom. It was for them that I first thought of the slate shelf, with the inch of sandy soil for the roots to run in; this thin bed was constantly as wet as the place would hold, from the watering of pot plants, between which certain bulbs stood for experiment. *Coburghias*, *Phycellas*, *Phadranassas*, and *Leucocoryne*, would grow and flower on this shelf better than by any other method I ever heard of; but a cool greenhouse seems too exciting to *Phycellas* at least, and in the open air, under a south wall, I think it is not safe to allow the roots to run deep. My firm belief is, that a great number of South American bulbs require a very different treatment from all others; that a temporary frame against a south wall is the best place for them; that they should be sheltered from early spring to the end of May; and that the frame and glass should then be removed, and the bed to be more liberally watered through the summer than is our usual custom; and also that the bottom of the bed should be impervious to the roots, at a depth of not more than four inches; and I cannot think of any better plan than soft bricks or very porous stone to stop the roots. I am satisfied that all

the bulbs which inhabit the lower grounds, from Valparaíso to Lima, will flower easier that way than by any other means. There are bulbs in different parts of the world that require, or, at least, would flourish in an onion bed, other circumstances being favourable. Mr. Pince's new *Hemanthus* is one of them; and yet it will do just as well on the shelf of slate, in almost fine sand, if the roots are constantly kept moist. It was on that shelf that it first flowered in this country.

PHYCELLA BIFLORA.

This is one of the most beautiful bulbs belonging to South America. The flowers are numerous, on long peduncles; they are above two inches long, and as much across the opening, where the colour is of the brightest and most intense scarlet, with a shade of purple; the tube at the bottom is bright green, or greenish-yellow. The remains of the cup are divided into two or three sharp-pointed lobes between the stamens, and it is on this part of the flower that the main character of the genus rests. The remains of a nectarian membrane are manifest, in some shape or other, in all the *Phycellas*—that, with the folding-in of the perianth (convolute), when the flower is closed, are the two points on which the genus rests. This beautiful plant was exhibited before the Horticultural Society in April, 1838, by Mr. Tomard, now Her Majesty's head man at Osborne. Mr. Tomard and I used to meet that season, once a month, in Wright's Hotel, in the Strand, with the Committee of the *Gardener's Benevolent Institution*; and that is how I recollect so well about the then newest and best half-hardy bulb in the country.

PHYCELLA BREVITUBA.

This is a most marked species, from the fact of the tube being all but wanting, "scarcely more than annular;" and, were it not for the private mark, Dr. Lindley, who founded the genus, would have been at fault with this plant. As it was, he remarked, when describing it, that "it is a matter of no little difficulty to distinguish the species of this beautiful genus." There are only four flowers on a scape; the flowers not much more than an inch long, owing to the want of a tube; they are scarlet, with an orange-and-scarlet bottom. It is a native of Chili, and was introduced by Mr. Knight, of the King's Road, Chelsea, who first flowered it, and, probably, some of the stock may be there now, in the hands of Mr. Veitch.

PHYCELLA CHLORACA AND OBTUSA.

These two must be cancelled; they are transferred to *Phadranassa*, but the same general treatment will do for the two families.

PHYCELLA CORUSCA.

There is very little to distinguish this from *ignea*, of which it is only a variety, with a longer style, and white filaments. The flowers are a bright scarlet, and yellow below, and upwards of two inches in length. The teeth, or processes of the cup, are longer than usual in this variety. It is a native of Concon, in the north of Chili, growing in poor, sandy soil.

PHYCELLA CYRTANTHOIDES.

The peduncles are very short in this fine species, so that the flowers turn down without spreading out, as in the genus *Cyrtanthus*; hence the second name. The flowers are scarlet, but not so bright as in the varieties of *ignea*, and they are greenish-yellow at the bottom. From the close, drooping flowers, and the red stamens, this species is easily known by any one who can distinguish a *Phycella* at all. It is, also, from North Chili, on the sandy hills, close by the sea, near Concon.

PHYCELLA GLAUCA.

This is also a variety of *ignea*, with the usual fiery scarlet flowers, with yellowish bottoms; the distinguishing marks are the glaucous leaves, red filaments, or stamens, which are about equal lengths with the style; all these varieties inhabit the maritime, sandy hills, in the north of Chili, and they are of the most obstinate of bulbs to flower freely; but by taking up the bulbs while at rest they are just as easy to keep as the *Van Thol Tulip*. I once had a parcel of twelve kinds of bulbs from these parts in Chili, from a lady who had them many years, but could not flower one of them; some of them I failed to flower, but *Phycella ignea*, and its varieties, readily yielded on the slate shelf; and if the whole had been newly-imported, I think they would have flowered at once; but let some of these bulbs once get the wrong way, and it tires a man out to get them round again; so that if I were to try a curious experiment to-morrow with any of these *Phycellas*, I would rather wait for a fresh lot from Chili than take my chance with bulbs that have been in the hands of some growers for the last ten years.

PHYCELLA HERBERTIANA.

This is a three-flowered species, with narrow, blunt leaves, and purplish-red flowers on long peduncles; the bottom of the flower is orange-coloured, and the membrane a mere fringe all round the opening of the tube. It was discovered at a place called Cumbre, a pass in the mountains between Valparaiso and St. Jago, and is less conspicuous than those found down near the coast.

PHYCELLA IGNEA.

The leaves of the true *ignea* are tipped with red; the flowers, six on a scape, are bright scarlet, with a yellow bottom; the peduncles are long, giving a wide spreading to the umbel; the stamens are longer than the flowers, and the pistil longer than the stamens; the membrane is in the shape of two pointed teeth between each division of the flower. This is a hardy, dark bulb, but most difficult to flower well. It was first introduced into Lee's Nursery.

There are several other *Phycellas*, known by dried specimens, sent home by different travellers, and no doubt some of the bulbs are in the country, but, as they are so very difficult to flower under the usual treatment, we may not hear more about them. Any one who may possess very dark-coloured bulbs from the arid plains of Coquimbo may rest assured that he has some kind of *Phycella*. We have several described from hence; also one from Mendoza, one from Colmo, and the finest of all from somewhere near Valparaiso, by Cumming, which is called *magnifica*, of which I have a drawing now before me. The flowers are three inches-and-a-half long; the tube is red; the middle part of the flower golden-yellow, and the top and opening a deep red, or crimson; and there is another variety of it with the flowers equally long, and nearly all red. That all these kinds are just as easily got at by any one interested in bulbs who lives at Valparaiso, or thereabouts, as any of the Cape Irids, there can be no doubt. All we want is a more general diffusion of "useful knowledge" about bulbs among our home amateurs, who have not the many perplexities incident to serving gardeners to contend with; and we should excel in this line beyond the growers of any other country.

PYROLIRION.

This genus, which comes very near to, if not only a section of, *Zephyranthes*, is named the Fire-lily, from the fiery-orange of *flammeum*, one of the species which grows common enough in corn-fields, and on hills near Concepcion, in Chili. Another species, not unlike it, is the

Amaryllis aurea, of the "Flora Peruviana," and grows in strong cultivated land all round Lima, where it flowers in January and February. *Aureum* was first introduced to the neighbourhood of Liverpool by the late Richard Harrison, with whom it flowered so late as April; and there is a third species mentioned, but not yet introduced, that I am aware of. They agree with *Zephyranthes* in having only one flower on the scape, but they delight in stronger and more rich soil than any of the *Zephyranthes*. The same strong yellow loam which suit *Hippeasters* so well is the right thing for *Pyrolirions*. The flowers of *aureum* are stalkless and upright, and full four inches long; those of *flammeum* are not quite so long; the leaves of both are long and narrow at both ends, and generally only two to a bulb. The stigma in these flowers is very curious—it divides into three parts, and each division is in the form of a spoon.

SCILLA PLUMBEA.

This is the last species on our list of half-hardy squills, and I introduce it first in order to show how such things get about in books on the science. This is a Cape of Good Hope species, which flowered at Kew in 1813, when a drawing of it was made seventeen years afterwards, when it could be traced nowhere. The drawing was published in the "Botanical Register," "in the hope that others may be more successful;" but from that day to this the hope has not been realised, and this lead-coloured *Squill* still remains to be reintroduced.

SCILLA MAURITANICA, HYACINTHOIDES, AND BREVIFOLIA.

As far as I can make out, are just in the same predicament as *plumbea*. They seem to have been fated for mishaps. Tournefort, or some great man of his time, put Linnæus on the wrong scent, and from his day to this hour we call a *Scilla*, that is common on both the western shores of the Mediterranean and in the South of Spain, as if it were only found in Peru—*Scilla Peruviana* of our borders. All the Squills are either blue or purple. *Cupaniuna*, a very rare Sicilian bulb, is a light purple; and there is a white variety; and a very pale pink variety of *Bifolia*, which I possess myself; of all the rest I only know of blue-flowered ones; and I quite agree with those who consider that colour is the only difference between *Scillas* and *Ornithogalums*; but I cannot account for it that the two groups have never been tried by florist breeders for improving the race.

STENOMESSON.

The genus *Stenomeson* is a very natural group of South American small bulbs, with red, scarlet, or orange flowers, mostly of one colour in each flower. The main feature on which the genus is founded is very apparent in the flower of almost all the species—a contraction of the middle part of the tube; from *stenos*, narrow, and *messon*, the middle. After this contraction, the flower widens upwards; and if one flower of any of the species were cut off a gardener might easily mistake it for the flower of a *Bomarea*. The bulbs are generally dark, roundish, and with a very narrow neck; the style is larger than the stamens, and they are a little longer than the flower. They flower without much trouble, and like a free, sandy soil, a little shade from the mid-day sun, and abundance of moisture at the roots in the height of summer, and complete rest from the end of October till March; they also flower before the rise of the leaves.

STENOMESSON CROCEUM.

This is a very pretty, deep orange flower, with six or seven flowers in the umbel; it has the stamens shorter than any of them, not quite so long as the flower; the scape is a foot high; the leaves are narrow, and a

little rounded, or rolled back on the margin. The bulbs were sent here from Lima, by J. M'Lean, Esq.

STENOMESSON FLAVUM.

This is golden-yellow, with a long style; the stamens a little longer than the flower; and the nectarian membrane, which connects the stamens in all the species, is sharp-toothed between each pair of stamens in this species. It is a native of the sandy hills in Peru, by Lurin and Pachacama.

STENOMESSON AURANTIACUM.

This is among the newest, and from the province of Quito, where they seem to be more numerous than on the Peruvian slopes. The flowers are short, five or six in the umbel, and of an orange colour. The style is longer, and the stamens shorter, than the flower.

STENOMESSON CURVIDENTATUM.

This is a stout flower, with the style and stamens of equal length, and much longer than the flower. The umbel is two-flowered, and the colour is orange-yellow. The specific name refers to the two curved teeth of the membrane, which roll back between each pair of stamens, giving the inside of the flower a very marked character. A native of the Amancaes Hills, near Lima.

STENOMESSON COCCINEUM.

This is a slender species, from Tarma, in Pern, with four flowers on a scape of a deep scarlet colour. The stamens and pistil are nearly of equal length, and longer than the flower. It comes nearer to the shape of a *Phycella* than any of the genus.

STENOMESSON HARTWEGII.

A two-flowered species, discovered by Mr. Hartweg, near Quito. The flowers are orange-red; it is one of the hardiest of the race. Its habit of flowering in pairs, and the nodding flowers not more than an inch-and-a-half long, render it a well-marked species.

STENOMESSON LATIFOLIUM.

This is a remarkable species, the leaf being nearly two inches wide in the middle, about four times broader than is usual in this genus; but like the rest of them, the leaf narrows much at the bottom; the flowers are small, and of a bright orange colour. It was sent from Lima, by J. M'Lean, Esq., in 1837, and grows later in the winter than any of them.

STENOMESSON VITTELLINUM.

"One of the prettiest of the Western American bulbs." —*Bot. R.* That peculiar yellow, called yolk of egg, so scarce in flowers, distinguishes this species, reminding one of the Australian Yellow *Calostemma*. It was sent, by Mr. M'Lean, from Lima, to the Horticultural Society in 1842; it produces six upright flowers on an umbel, on very short peduncles; the leaf is broad for a *Stenomesson*, and rolled back on the edges.

There are several more of them recorded, and some others have flowered at Spofforth, of which I cannot trace further particulars. One called *pauciflorum*, in "Hooker's Exotic Flora," is golden-yellow, and prettily marked with green and red on the tips, much like a *Coburghia*; a very handsome flower. No bulbs are better suited for a south border of light rich soil than these, as they die down mostly for the winter, and are not at all excitable to start too early in the spring, and our ordinary summers are quite hot enough to flower and ripen them out-of-doors. Once they are well-established, they would increase by offset bulbs; and the first year these offsets have only one leaf a-piece.

D. BEATON.

(To be continued.)

LITTLE MATTERS OF THE SEASON.

I PROPOSE that this paper shall be a thing of shreds and patches, taking merely a passing notice of a number of the minutiae that are just now perplexing many new subscribers, who are apt to complain, that, unless in the correspondent's column, the bulk of our matter is yet too transcendental for them.

AIR-GIVING.

"I see that Mr. A. keeps his greenhouse with very little air on now; while Mr. B. has air on even at night, and all the windows and doors open during the day. Which shall I follow?" This must depend on circumstances. If your greenhouse is filled with established greenhouse plants, such as *Heaths*, *Camellias*, *Azaleas*, &c. it will be impossible to give them too much air, while the outside temperature averages 40° at night. As a general rule, the warmer, closer, and darker the weather, the more air in proportion should you give, as there is less danger of a plant being drawn spindly, made the victim of insects, or mildew, in bright weather, than when it is dull and hazy. In the former case, the wood is solidified, and fresh matter added; in the latter case, the matter in the shoots is merely extended, as you would pull out a piece of Indian-rubber. Set it down, then, as a primary principle, that healthy growth can only take place in light. In dull, warm weather, as we have lately had, our object should be directed more to retard extension than to promote it. Hence, air, in such weather, is more wanted among greenhouse plants than when the sun shines, though we gladly take the opportunity of the latter circumstance to give air for drying the house, and rendering it sweet and comfortable. The mode of giving air in such quiet, still weather now, should be different from that we adopt in cold, frosty weather in winter. In the latter case, the air given should be moderate, chiefly at the top of the house, and as equal as possible. Now, we would prefer giving it very unequally in such close muggy weather, for the purpose, if possible, of creating a draught; and it is very possible to excite a motion in still air by this means; namely, instead of opening all the sashes, back and front, for a few inches, to keep three-parts of them shut, and open the others to their full extent. This method will apply to all kinds of greenhouse plants, such as *Geraniums*, *Cinerarias*, &c., when in a growing state; and *Chrysanthemums*, and such hardy things, when blooming; but such plants as *Salvia splendens*, *Scarlet Geraniums*, &c., in bloom, though they must not be kept in a stagnant atmosphere, would not keep their bloom so long as when exposed to these strong draughts. If there should be many such plants as the above *Salvia*, or if an *Epacris* is wished to bloom early, and the same thing should be desired of *Camellias*, *Azaleas*, *Cinerarias*, then the house, or one end of it, where these particular things stand, may be kept closer with advantage; hence, where *Heaths* are grown in such a mixed house, they should always occupy a place at one end by themselves, that air may be given there more liberally than in other parts of the house; as weak-drawn growth, in the whole of this tribe, is just the precursor of mildew; and that, notwithstanding all sulphur applications, is too often the forerunner of a resting-place for good specimens at the rubbish-heap.

WITHERED LEAVES OF EVERGREENS.

Some of our friends are alarming themselves needlessly on this account. Packets of leaves of *Polygala*, *Diosma*, *Chirozema*, *Azalea*, *Camellia*, *Daphne*, *Poinsettia*, &c., are sent in a blotched and withered state, with commendable inquiries as to the cause and the remedy. Now, these appearances are as frequently quite natural as they are the result of improper treatment. Though most of these plants are evergreens, always, when in

health, possessing green foliage, and, therefore, quite different, in this respect, from deciduous plants, it by no means follows that the same foliage is always to remain persistent, like that splendid evergreen, the *Arucaria imbricata*, spoken of by Mr. Appleby the other week. It is just as natural for a Daphne to lose a few leaves every year, as it is for a Laurel, or an Evergreen Oak. I have known cases of gardeners priding themselves in their evergreens in winter, and yet grumbling sadly at the litter they were always causing in summer. Keeping in view, then, that few of the evergreen plants we cultivate have foliage that never changes or decays, we shall see no cause of alarm in a withered leaf while the general health of the plant is good. But there are several causes that produce yellow leaves before they would naturally become so,—such as keeping the plants in a rather low temperature after being exposed to a high one, or just the reverse; placing a plant rather suddenly in a raised temperature, when the excitement, acting chiefly on the youngest part of the shoot, leaves the older part without sufficient nourishment. Such an effect is hastened, when, in the first, or cool state, there is extra moisture at the roots; and when, in the second, or extra warm state, there is a deficiency of necessary moisture. Thus, for example; were we, in April or May, to pass a row of nice plants of florists' Pelargoniums, on most of which some of the larger and lower leaves were getting yellow, we should see a proof so positive that the plants had been neglected in watering, that no reasoning, or assertion, would shake the firmness of our belief: the effect would register the cause. But the blotches and scalds, on such leathery leaves as Camellias, are generally produced by the sun striking them after passing through a knot, or scar, in the glass, and from drip falling and resting upon them from rusty iron roofs. For the first, the part in the glass must be found and painted over; and for the second, the house must be kept well-painted. I have no doubt that plants would be relieved from all danger of burning by using Hartley's rough glass, and the annoyance of shading would also be avoided.

WATERING GREENHOUSE PLANTS.

"I am getting quite bewildered. I am told to give plenty of water to this plant, and little water to another kind of plant; but, as I cut along with my water pot, this "*another*" gets a deluging, before ever I think about it or examine it. Can't you help me from doing this?" I really fear that even Hercules will do nothing for you, unless you help yourself. It is not knowledge you so much want; it is the using it aright. This indiscriminate pouring from the water can ruin more plants than all other causes put together. This is such a besetting sin among brisk, active, blue aproners, that old practitioners are forced to modify the evil, by adopting modes of potting that will prevent a plant remaining long in a drenched state. From this work, and other sources, they have got the whole theory of the principles of watering comfortably lodged in their brains; so snugly, indeed, that it cannot be induced to come down to govern the water spout until after the mischief is done. We are so pleased, however, with the open manner in which confession is made, and that so much akin to what not so long ago I could honestly have made myself, and witnessed done by others, that without recapitulating what has already been advanced, I would gladly draw attention to a few matters as helps.

With all our deficiencies and drawbacks, the old adage about "two of a trade," &c., was never more at fault than in the case of gardeners; for, on the whole, we are a brotherly, warm-hearted community. The public seems to understand this so thoroughly, that go or visit where a gardener may, his knowledge, if not himself, is very apt to be pounced upon as common property. He can-

not but feel, at times, that he has been pretty well *drained* over a cup of tea. Each and everything about this and that plant is brought in requisition, and though too much is asked to be carefully remembered, encouragement to floristry is given, and good breeding is rarely exceeded. At times, indeed, a person, who would look his astonishment did you make any inquiries respecting the mysteries of his particular craft, will excuse freely the inquisitive bump, and even send you a letter of inquiry as to advice, without even the accompaniment of postage-stamps for an answer; but, in general, the making free with gardeners' knowledge proceeds upon the principle, that in their tastes they are just "*one of us*," and that the information is asked for as much for doing us honour as for advantaging themselves. Had we, like other professionals, made a point of always selling our advice, there would have been little taste for gardening, few plants in windows, and few subscribers for *THE COTTAGE GARDENER*.

Well, among the matters of inquiry, the watering of plants is a constantly recurring one. "Water only when dry, and do it thoroughly then; and wait until your services are needed again"—seems simple enough; but, the next opportunity that presents itself, the same inquiry is repeated. Could we say, once a day, or once a week, the poor plant would get more justice. It is so much more difficult to remember, that the time of the year, the state of the weather, as respects heat and cold, sunshine and shade—and the condition of the plant, growing and blooming, or standing still and resting—must all influence the *time*, and also, though in a less degree, the *mode*, of watering. It has often been stated, that a little practice will discover, by the weight of a pot, whether the soil within is wet or moist; and a sharp stroke with the knuckles on the side will be a good index—that stroke emitting a brisk sound when the soil is dry, and a dull sound when it is wet. The causes of this dryness are chiefly two—the evaporation of moisture from the soil, by a dry and warm atmosphere; and the perspiration of water through the stems and foliage of the plant, the quantity thus thrown off being in proportion to the youth and vigour of the foliage, the degree of heat, and the amount of sunshine. Hence, it will be perfectly obvious, that a Geranium, in a small pot that would require refreshing twice-a-day in a bright day in July, may, in dull weather, require watering once a fortnight in a cool Greenhouse, in November; or, perhaps, once a week, if placed in the drier atmosphere of a sitting-room. Our friends, will, therefore, see the uselessness of putting the question so often asked, "How often shall I water these plants?" The only answer that can be given is, Let them have drink when they are thirsty. Were they thorough water drinkers themselves, we would say, treat your plants exactly in the same way. For, though we believe "Adam's ale" to be the best of all wines, we do not believe that a person in health will ever use it unless when he *needs* it.

The times *must*, then, be varied to the circumstances of the plant and the state of the weather. Not so the *modes* of applying water to growing plants. *The water, when given at all, should be in quantity sufficient to reach the whole of the roots.* In the height of summer, and even now, in the case of plants in small pots, and these well filled with roots, we should have no objection to say, *moisten the whole of the soil thoroughly*; but, as some plants may be rather fresh potted, and others placed in pots so large that the whole soil will not be occupied for some time, it is safer to speak of moistening the roots, instead of the soil, and for these reasons: roots will be more encouraged to ramify and spread when the soil beyond them is not over wet; and wet soil in a pot, unoccupied by roots, at this season, is apt to become sour and sodden, and thus tell upon the

plants, in gouty shoots and diseased leaves. When, therefore, as respects growing and flowering plants, our friends may read such instructions as, "Give water sparingly;" "Little water will now be required;" let it be clearly understood, that the smallness of the quantity used has reference more to the distance of time between the applications than the quantity given when it is wanted. When given, let it reach every root, and repeat not the application until the soil is again getting dry; whether that takes place, according to circumstances, in the course of a day, a week, or a month.

Those who have carefully studied the pages of this work will know that plants at rest, and deciduous plants, when they have lost their foliage, and it is desirable to keep them dormant, must be watered somewhat differently. It will have been seen that succulents, during winter, will scarcely require any water at all. The generality of plants that we wish to rest, say a Fuchsia, must be neither wet nor dry. There is always an attempt at balancing accounts between roots and stems; and great moisture at the former would seek a vent in swelling the buds of the latter. Such dryness as a Cactus enjoys would give you first shrivelled and then lifeless stems. When, for various reasons, we wish a plant to be kept neither wet nor dry, but in a medium between the two, we must not give water enough to soak the whole ball at any one time, but commence the moisture to the centre of the ball at one time, and the circumference at another, and, what is better than either, prick the ball over with small holes, say one every two inches, and two or three inches deep, with a small wire, and just give a little more at a time than will be sufficient to fill these holes. When many plants, however, are kept in this resting condition, nothing is more economical or useful than to hook them all together, and cover the pots over with some substance, such as damp moss, which will prevent the soil being dried; and then a sprinkling of the stems, in a dry day, with a syringe, would be all the watering the plants would require, until it was deemed advisable to start them into fresh growth.

ARRANGING PLANTS IN GROUPS.

This will be a further help to the waterer. The "another plant" would not be quite so likely to get a jet when it did not want it. Besides, the system will evince a higher style of order, and present more variety, in a given space, than when all kinds of plants are mixed together, so that every part of the house presents a similar appearance. Thus, with a group of Chrysanthemums, Cinerarias, Geraniums, Salvias, Primroses, Heaths, Epacris, &c., you can give each group the water it requires, cold or warm, clear or enriched with manure. But even with the individuals of each separate group, cast your eye, and even your hand, searchingly over it, before you let the water-pail approach it. Get used to it, and no time will be lost; it will become in a manner instinctive.

R. FISH.

THE GLADIOLUS.

(Continued from page 122.)

Propagation: by Offsets.—The directions and observations given and made in THE COTTAGE GARDENER, both by myself and brother writers, are intended for lovers of gardening that we suppose to require such information. Hence we write, and, perhaps, sometimes repeat, many minute particulars and points of culture, and so forth, as the non-experienced cultivator may possibly deem superfluous and unnecessary. For such persons we do not write. Full as the information may be, it is not particular enough, as is witnessed by the many queries received and answered every week. I make these few remarks to account for my giving such length-

ened papers on the culture of flowers, and in particular just now on the *Gladiolus*.

Whoever has taken up a root, or bulbs, more properly speaking, of this plant, must have observed that it had produced several small bulbs not so large as the common garden pea on the underside of the old bulb. I have counted as many as twenty on one bulb of the *G. communis*. Other varieties, it is true, do not produce offsets so freely, but they all propagate freely enough by this mode. At the time of taking up the roots, separate the offsets from them, carefully keeping each variety or species to itself, and label them correctly at once to prevent mistakes; try and keep them the same way as the full grown roots, but plant them at least a month earlier, to enable them to make the most of the season of growth. The time for planting these offsets depends upon the time the old bulbs are taken up. The early bloomers are taken up, of course, early, and the offsets of these may be planted in September, whilst the late bloomers cannot be planted so early, because they are then in the ground; so regulate the time of planting the offsets of these accordingly.

At the time of planting, have a bed prepared similar to that made for the blooming bulbs, as described in a former paper, and when it is ready bring out the offsets. It will be advisable to pass the very smallest through a sieve with the mesh just large enough to let them through. This will separate them into two sizes, the larger ones remaining in the sieve. If the quantity is but small they may be divided by the hand. Draw drills four inches apart, and three inches deep, with a pole; a triangular-shaped one is the best for this purpose. Then plant the large-sized offsets in the drill, three or four inches apart, pressing each down gently to keep each in its place. The small fry may be planted thicker; indeed, I always sowed them in the same way as I would the large-growing peas, that is, rather thinly. By planting them thus in two sizes, the larger bulbs will have room to produce their broader leaves without shading or choking the smaller ones; besides, the larger sized will soon become flowering bulbs if grown by themselves, and good room given to each. When it is judged they are large enough to bloom, plant such in a bed by themselves, in order to note which are true to their kinds, as sometimes the varieties degenerate. Afterwards they may be planted out along with the parent stock. Such bulbs as have not attained the flowering size may be replanted till they do. The smallest size should remain in the nursery bed two years, and should then be taken up, the larger bulbs sorted out, planted separately, and the small size replanted for two years longer. This may appear a tedious process, requiring a large amount of time and patience, but when once begun, and the first year or two passed over, the cultivator will be receiving an annual reward by his increased stock of blooming bulbs of these truly, when well grown, magnificent flowers.

The *Gladiolus* is subject to the attacks of the red spider (the remedy for which I have already mentioned) and also the wire-worm and mice. In preparing the bed, keep a constant look out for the wireworm as the soil is being turned over. They are easily seen because of their clear yellow colour; the most certain way of destroying these hard-cased vermin is to collect them as they are discovered, placing them in a basin with a small portion of oil in the bottom, and when the soil is all turned over, and all caught and put into the basin, then pour some boiling water over them, and you are certainly clear of that lot. Some may escape the keenest and quickest eye; and, for fear of that, cut some potatoes or carrots into slices, and bury them in the bed about as deep as the bulbs. Take them up now and then, and if any wireworms are preying upon them, scald them to death likewise. Mice may be caught in figure of four

traps, or any other, well baited. I have prevented their depredations by placing chopped Furze over the bulbs, so that when they thrust their little noses into the ground in search of the roots the prickles of the furze scratched and scared them effectually. I have saved many a crop of garden peas by this method.

These bulbs are subject also to a disease; and, I am sorry to say, I could never discover either the cause or the remedy. It is quite as fatal in its effects as the Potato murrain, but it is not the same disease, for the Potato rots with a superfluity of moisture in it, but the *Gladiolus* becomes dry and powdery. I have had *Crocuses* and other solid bulbs suffer from the same disease. In the spring, the tops of these diseased bulbs often make an attempt to grow and send up leaves, but for want of roots, which these diseased bulbs never emit, the leaves turn yellow and die. I am not aware this disease is infectious, but for fear it should be, I always remove the diseased bulbs as soon as discovered, and also the soil in immediate contact with them.

T. APPELBY.

STOVE FERNS.

(Continued from page 123.)

CIBOTIUM.

ONE of the many genera taken from *Aspidium*; and so named from *Kebotion*, a little box or chest, the form of the seed-vessel.

C. BAROMETZ (The Scythian Lamb Fern).—A strong-growing Cochin-China Fern, the rootstock of which is short and thick, and covered with long brownish hairs, giving it an animal-like appearance; hence its fabulous name. The fronds are bipinnate; the lowest pinnae are long, and gradually shorten upwards. They grow erect, and often reach ten feet in length. Each leaf has a stem, and the seed-cases are seated near the base of the leaf. When fully grown, every frond is fertile, that is, bears seed. It is a handsome Fern; but to grow it well requires a large stove. Easily increased by division. I have cultivated it for many years, but was never able to produce the lamb-like appearance of the rhizoma.

C. SCHEIDER (Scheides).—A Mexican Fern, of great beauty, easily distinguished from the preceding species, by the stems, as well as the rhizoma, being covered with the long woolly brown hairs, and by the tree-like rhizoma, which, in cultivation, has reached three feet high. Upon this rootstock the fronds are placed, and are six or eight feet long, rather drooping, bipinnate; the seed-cases are produced on the lower part of the pinnae, and number from three to six on the margins of the leaves so situated. It must be propagated by seed, as the rhizoma does not creep.

CYATHEA.

A tall-growing genus of Ferns, allied to *Dicksonia*. In their native habitats some of this species become trees fifty feet high, with a head of fronds at the top, giving them a Palm-like appearance. The species in cultivation have been lately introduced into British gardens, and consequently are rare.

C. ARBOREA (Tree-like).—In Jamaica, its native place, this species is truly a tree Fern. The fronds are tripinnate, from six to eight feet long, standing on an erect rhizoma; they are very stiff, leathery, and of a dull green, with scales on the underside of the leaves. The stems are almost black, and have thorns on them. The seed-vessels are cup-shaped, with the seeds standing above the edge, looking, when magnified, very like an acorn enclosed in its cup. As the rhizoma does not creep they must be increased by seed. Being such a large Fern, its culture should not be attempted excepting where there is plenty of room.

C. DEALBATA (Powdered).—A New Zealand tree Fern, of great beauty. A friend of mine sent me, some years ago, a quantity of spores of this fine Fern; but whether the seed had perished on the voyage, or been shaken out of the cases and lost, I could never get one to make its appearance. At Kew there is a fine specimen, imported alive, and it is now nearly three feet high. I have seen dead stems of it nearly as thick as a man's body, and upwards of ten feet high. It is said, in our wars with the natives, these Fern stems served the savages as skulking places, from whence many a deadly arrow has been shot at the unsuspecting Briton. The fronds are very beautiful, of a bluish-green on the upper surface, and richly powdered with white underneath. They are six or seven feet long, jointed, and placed on the top of the rhizoma. Stems covered with scales. Requires a roomy stove, and is increased by seeds.

C. ELEGANS (Elegant).—A tree Fern, from Jamaica, and perhaps the handsomest in cultivation. The Kew plant is eight feet high in the stem, with some fronds ten feet long; they are thrice pinnate, the lowest pinnae spreading considerably, and gradually growing less upwards. The frond stems are densely covered with almost white scales, which adds greatly to its beauty. Requires plenty of space to show itself, and can only be increased by seed.

C. PATENS (Spreading).—A Jamaica Fern, of great attractions. The fronds are slender, gracefully spreading out and drooping. They are like the whole genus, thrice cut or pinnate, and are of a beautiful yellowish-green. The rhizoma is the most slender of all the cultivated species, growing three feet high. Upon it the fronds are placed, spreading out to six or eight feet long. The stems are light brown, covered with prickly scales. This fine Fern is well worthy of cultivation where there is room for it to expand. There are several other species of this fine tribe of Ferns described but not yet introduced.

CYRTOGONIUM.

From *Kyrtos*, curved, and *gonu*. A genus of Ferns, separated, by Mr. Smith, of Kew, from *Acrostichum*. The small veins on the leaves are singularly and suddenly bent or angled, like the knee of the human frame.

C. CRISPATULUM (Spreading-crested).—A handsome Fern, from Ceylon. Fronds pinnate, inclining to be erect, crenate or cut at the margin, of the deepest green. There are barren, and fertile, or seed-bearing leaves, the latter shorter than the former. On the barren fronds there are, in the hollow of the scollops, a short thorny substance, the stems have some scales, and the rhizoma creeps; hence, it is easily increased by division. The whole plant seldom exceeds two feet in height; hence, it may be grown in a moderate-sized stove.

C. FLAGELLIFORME (Whip-shaped).—An East Indian Fern, of the easiest culture. I have cultivated it for years, in small pots, in the deepest shade of the stove. It is easily known by the leaf becoming narrower towards the end, in the same way as the whip, but more suddenly, and by its producing at the end a knob or knot, which, if not taken off, will soon send out leaves, and, finally, roots; by these it may be readily increased.

C. REPANDUM (Spreading).—A lately-introduced Fern, from Java. It also produces living plants on the leaves. The difference, or distinguishing mark, of the species, is the spreading habit of the barren fronds, and the leaves of the fertile frond being erect, easily grown, and increased by the living plants on the leaves being taken off, potted, and kept in the shade till fully established.

T. APPELBY.

(To be continued.)

FLOWER-GARDEN PLANTS FOR A LATE DISPLAY.

WHILE the flower-gardener has been straining every nerve to obtain a good display in his beds in the early part of the season, but little attention has been paid to what was likely to hold out to the end. The general answer given to any enquiring on such matters is, that if early flowers can be obtained there is no fear but late ones will be forthcoming. However, late ones, like early ones, are not all of equal merits; and it is to call attention to the difference they present in that particular that I now forward you a few stray notes on the subject.

In the first place, it is almost needless to observe, that the present season has been an extraordinary one for bedding-out plants, as well as many other things. The usual complaint of a dry planting-out-time has not been applicable to this season, for the cold rains of spring, following in quick succession the melting snows of March, kept the ground so cold, that the season was far advanced ere it attained that genial warmth so necessary to vegetation, the consequence was, that the progress of everything was slow, especially of such things as the generality of bedding-plants usually are. Now this completely prevented the more tender from making the necessary progress towards flowering, which, in finer seasons, they were wont to do; but as I shall, probably, on another occasion, describe its effects more generally, I will, in the present paper, confine myself to the few plants, which, by the peculiar construction of their flowers, have been able to withstand the bleaching rains with which we have been visited; and as such qualities are not to be found in all flowering-plants used for bedding purposes, they cannot be too generally known.

CALCEOLARIA.—Numerous and important as this family is, there are but few of its members capable of withstanding the drenching rains of autumn, while some are easily shaken off by a slight shower in summer. Now, this is a sad drawback, as, in a season like the present, when for several weeks it was scarcely ever ten consecutive hours without rain, and that often heavy, it soon was evident which could, and which could not, withstand it; and the best of the whole lot was a bright, clear, yellow one, of rather a tender, delicate habit, and rambling growth, but a large truss, and remarkable clear colour; it resembles *Amplexicaulis* in all points, except the foliage is less reflexed and of a deeper green. I have had it for some years, and have generally grown it mixed with other kinds of a stiffer habit, which keeps it up, and this season I have it grown so, but, somehow, the continuous wet has been beneficial to it more than to others, so that it has, in a measure, overrun them, and at the time I write (the first week in November), is as full of bloom as it has been at any time during the summer, and the flowers appear almost purer and fresher from the frequent ablutions they have had. This is a great point, for the shrubby ones amongst which it is planted have lost their flowers long ago, and present nothing but the foliage, and dead or decayed flowers, cut off without their even being showy or useful. This *Calceolaria* is also an excellent one for bouquets, having long firm stalks, and, as I have said, a good head of bloom. It resists the rain better than *Amplexicaulis*, which, in other respects, it resembles. This plant I call my best for late flowering; besides which it is ornamental even at an early period; for, though the harder-wooded kinds will flower sooner, and endure more frost, yet they must all give it the palm for enduring autumn rains, and maintaining a degree of gaiety in November which would grace a September display.

Next, in point of ornament and general utility, is the *SALVIA FULGENS*, and its variegated offspring. This,

which at best, is a late flowering plant, has this season kept on later and more freely than on former occasions, so that its flowers now present a degree of brilliancy which it does not excel at an earlier period: in this respect, this *Salvia* differs from most high-coloured flowers, as *Dahlia*, &c., which become paler as the season advances; the continued wet, and absence of sunshine, bleaching them, so as to alter them very much; but *Salvia fulgens* seems to resist all this, and its florets, like so many horizontal tubes, remain firm to the effects of rain and other casualties. Another feature I may mention, is, that the variegated kind (I mean the one with variegated leaves) flowers quite as freely as the plain one, which is not the case with some other plants having a similarly altered foliage, (a variegated *Coronilla glauca* being a very shy flowerer). These *Salvias* have been very gay, and even the blue one (*patens*,) has continued to exhibit its flowers quite as plentifully as in a more favoured part of the season. Of course, frost would destroy them, but as early frosts are more likely to occur in a fine, dry autumn than in a wet one, the utility of the *Salvia*, as an ornamental plant, is in no way diminished; it is true, it does not flower so early as some things; but it might be planted with the view of autumnal display, which many gay objects in August do not present now. When planted tolerably thick they support each other; and I often surround them by a dwarfer plant, as an intermedial one between them and the edge—the *Heliotrope* being very good that way. I, therefore, have no hesitation in recommending the *Salvia* as a useful plant for autumn decoration.

CUPHEA STRIGILLOSA.—This herbaceous plant, which is with me quite hardy, is not much of a favourite until late in the season, when the heavy dews and rains have washed its numerous little tubular corollas into a brighter colour than they at first appeared to possess, so that it presents a more decisive colour, or feature, than is given to it, when, in the earlier part of the season, it is put in comparison with other more gay objects; however, it stands the autumn rains well, and seems to improve by them, and its uniform growth, and other good features, point it out as one of the best and easiest cultivated bedding plants we have. I have beds of it which have remained for two or three years without a single plant being lost; in fact, the bed is run over with the roots, each sending up flower-stalks in abundance; but the beds are very dry, as I find it does not thrive so well on cold, wet soils, and is usually lost during the winter. I may observe, that I have occasionally planted the *Zauschneria Californica* with it, but the latter never answered satisfactorily; and this season less so than most others, so that I do not much admire the last-named plant, except for rock-work, or a mixed shrubbery, in which case it is very useful. The *Cuphea platycentra* is also showy in the early autumn, but its flowers being auxiliary and pendant are of but little use, except on close inspection, when the *strigillosa* exhibits a distinctive spike, &c.

PENTSTEMON.—The scarlet, white, and pink varieties of the *Gentianoides* breed are very useful autumn flowers, when they have been grown so as to bring them into bloom about September, for the first time, as old exhausted plants, which have been bearing flowers during the season, cease doing so before the autumn fairly sets in; when, therefore, a late display is necessary, young plants, from cuttings of the autumn of the year before, but kept outside and planted out at the usual time, will be most suitable, and few things, at this season, make more display than do the scarlet and white kinds mixed; and here, again, their tubular construction enables them to throw off water, so as to endure heavy rains without injury. Solitary plants, in mixed borders, are equally useful, only it must be borne in mind that they must be young ones; old worn-out

plants, which, in the early part of the year, produce a profusion of bloom, cease, in a measure, after that crop is off. The careful cultivator will, therefore, keep up a succession of young ones, and few plants are cultivated with greater facility, nothing being wanted but a common hand-light out-of-doors; and even that may often be dispensed with, but where it is to be had, cuttings put in at all seasons have an equal chance to grow, as they resist damp, in autumn and winter, nearly as well as a *Calceolaria*, while they endure the dry air of summer with less injury to themselves than that moisture-seeking flower. The blue kinds of *Pentstemon* I have never been able to make much of; for their habit being less robust than that of the scarlet and white kinds, they do not mix with them to look well; besides, if they did thrive and flower equal to these last-named, the bed would, nevertheless, look better without them; a good scarlet and white looks better without a blue than with one; however, I do not mean to disparage the blue varieties, or rather species, for they may be advantageously used elsewhere, but they have not continued to flower so well and so late as the more hardy kinds; neither have those of the *Campanulata* or *Atropurpurea* breed done much for the autumn, but they are, in a measure, discarded now, except in old and mixed herbaceous borders, where, with many other things, they are yet to be found.

LOBELIA DECUMBENS.—A dark blue variety of this has continued to flower remarkably well, and its flowers seem to withstand the successive rains, &c., better than many things of greater pretensions. This kind is of an extremely prostrate habit, and compact, rather than ragged, in its outline. It is, doubtless, the horizontal position of its shoots and flowers that enables the latter to withstand the hardships of a wet autumn. It is, however, too dwarf for many purposes for which *Lobelia*s are planted; otherwise, as a bedding-out plant, it possesses considerable merit.

I might mention some few more plants as being useful for a late display, but the above are the best that I have had this season. The *Fuchsia fulgens* flowered late, but then it hides so many of its blossoms that there is really but little show attending it, while all the other *Fuchsias* ceased flowering sooner than usual; the small-leaved one, *reflexa*, excepted; and as for *Geraniums*, *Verbenas*, *Petunias*, &c., they have long ceased to be attractive, and, in some cases, the plants have perished as well as the flowers. I might, however, mention, that the sweet-scented variety, which is grown simply for its fragrant foliage, is a very useful autumn plant, and furnishes sprigs for nosegays until a late period; but all tender varieties of the scarlet, and similar breeds, are better adapted to endure hot sunshine than unceasing rain. But it is needless entering on the list of flowering plants unsuited to October and November display; but any addition to those I have mentioned will be gladly received by me; and I have no doubt but others may have in their possession plants blooming late to a degree of perfection, which must, assuredly, enhance their value; and as a late bloom, like a very early one, is always acceptable, I make no apology for thus calling the attention of flower-gardeners to the matter.

J. ROBSON.

ALLOTMENT FARMING.—DECEMBER.

REALLY the very name of this month reminds one of rhiny whiskers and blue noses; and we may fancy we see the schoolboy blowing his thumbs, and the bluff ploughboy buffeting—one of the few chances his jacket gets of being well dusted. King Frost may soon be expected to hug us in his chilling embraces, and before—long before—he has finished his paralyzing hug, doubtless a new year will have commenced by anticipation, big, like all his ancestry, with

deep-laid schemes and sanguine anticipations. Well, so be it; neither Pride nor Despair were made for man. A light beams in the distant horizon; but how may we reach that light? By the path of duty.

"England expects every man to do his duty;" and let not our cottage and allotment friends imagine that such maxims apply only to the rich or the powerful: a mere labourer has as certain a duty to perform as a prince, and one of as high importance in point of principle. If men of this caste prove truly industrious, out of a regard to a duty they owe society as well as their own families, they assuredly fulfil the great ends of their being as well as mighty monarchs who govern uprightly and judiciously. The only difference is, that they cannot fare so sumptuously, cannot dress so fine, and are not compelled to undergo the affected smiles and obsequiousness of servile adherents.

Thus much I have observed, in order to rouse the minds of the apathetic, the dull, and the despairing, and those who are exceedingly partial to ease. Taking it easy, certainly sounds very pretty; but I much fear that our best interests will not be found here. From Solomon downwards, the wise of all ages bear testimony to the corrupting power of sloth; for this is the right title of a condition too often called, for politeness sake, "ease."

Away, then, my cottage friends, with all such fallacious notions. To rest with a good conscience, both nightly, after a good day's work, and to enjoy a Sabbath—a total rest, one day in seven—is all that the working portion really require to recruit the energies of both mind and body: but to attempt to live in ease, cannot, must not, need not, be the portion of that class of society, who, if they will eat, must work.

I will appeal no further, but look into our allotment affairs. I may here press much of the advice in my last paper, as to a thorough working of the soil when an opportunity occurs. It is impossible to over-rate the advantages of a winter's fallow by deeply stirring, and throwing the soil into sharp and high ridges: it not only improves the very quality of the soil, but destroys much insect life; and withal, throws the most stubborn soil into such mellow condition by March, that one-half the labour will suffice to introduce spring crops; and they will, moreover, be got in with much brighter prospects. Of course, all decayed or decaying vegetables will be first cleared off, and, as before advised, burnt or charred; and an opportunity here occurs of cleaning out ditches or other boundary lines, the dubbing of hedges, &c., to add to the bonfire. A convenient spot should be selected for the fire; and as much common or road-side parings, or even ordinary soil, should be placed around, before the burning commences, in order to choke up the mass when half burnt, and cause it to smoulder for days.

Water-courses should have been well looked to before the trenching commences and properly scoured; also fresh ones made where needed: thus will every thing be put in good working trim for another campaign. The manure-heap should also receive a little attention; but the cultivator should instantly settle in his mind what scheme of cropping he ought to pursue in the succeeding spring; for it may be desirable to introduce a portion of the manure for some crops. Where it is requisite to place manure at a low level, as in the case with some of our carrot-rooted plants, the ground may at once receive its allowance previously to trenching or deep-digging; for no shallow autumn digging will be advised by me. Such crops as *Parsnips*, *Carrots*, *Long Mangold*, &c., may thus be served; and if a little of finer compost, containing a sprinkling of Peruvian guano, can be introduced with the seed in spring, in order to produce a plant speedily, why, the plant will be established in a good foundation. The manures thus dug in may consist of the coarser particles; and, after this, the manure-heap may be turned to the very bottom during a severe frost; and this will also tend to the destruction of a host of enemies, in the shape of grubs, eggs, &c.

The crops being decided on, let pegs be put down at every point where a fresh crop commences, and the amount of ground for each accurately measured out, in order that no confusion or waste occur: these pegs should be numbered in succession; and the crops, whether single or mixed, duly entered on a sheet of paper, in order to be a guide through the spring and summer.

I will here give a specimen or two of the mode of writing the sheet:—No. 1 plot, twelve feet to east; to receive five rows of Kidney Potatoes, in end of February; Mangold sown between each pair of rows, in last week of April. Potatoes removed in the second week of July; and Swedes, from a sowing on seed-bed, made the second week in May, planted where the Potatoes were. Deep dug soon, but no manure now, the ground being in good heart. A little compost, with a sprinkling of guano and charred materials, introduced in the drill after Potatoes, for Swedes.—No. 2 Plot, ten feet to east: for spring-planted Cabbage, with a sprinkling of Longpod Beans all through them. This land is not rich, and must have some manure, rather coarse; the ground to be dug deep now, after manuring, and the Cabbages planted in middle of February; the Beans introduced some time after, being soaked six hours in tepid water.

Thus, or in a similar and well-concerted manner, may our friends proceed; and they may, at last, draw up a little condensed list of their sowings and other needs; showing, at one glance, what provision must be made for the whole demands of the spring and summer. Such may run thus:—For Plots Nos. 1 to 6, Cabbage-plants required of a dwarf kind, early hearting; one sowing in the middle of March, a second in the middle of May. Note—plants to be obtained for the February planting.—For Plots Nos. 4 and 5. Swede Turnips must be sown in the middle of May; kept rather thin in the seed-bed.

Of course, these cases are mere suppositions; but they will serve, perhaps, to show the uninformed how to secure a crop; for these matters, however small they may appear to those not immediately concerned, are of great importance to little people.

WINTER GREENS, OR CABBAGE WORTS.—Under this head, I must class every thing which bears a relationship to the Common Cabbage; for instance, *Savoy*s, *Green Kale*, *Brussels Sprouts*, *Brocolis*, *Coleworts*, &c. Of these, *Brussels Sprouts*, *Savoy*s, *Coleworts*, and *Brocolis*, are rather impatient of hard frosts and cutting winds; and, unless protected slightly in very hard weather, may prove a loss, instead of gain. As to the *Coleworts*, I have so often urged on the cottager the necessity of sending his *Coleworts* into the market before Christmas, that I need say no more here. *Savoy*s are a most useful as well as economical thing in the labourer's family: a well-headed *Savoy*, boiled in the same pot with a lump of fat bacon, is a dish for a first-rate squire, and needs not a Soyer to cook it. I have kept *Savoy*s in full heart, as well as *Red Cabbages*, for pickling, famously, by cutting off the heads in the end of November, placing them thinly behind a hedge or wall, on the north side; suffering them to become slightly frozen; and then strewing some litter over them, to keep them frozen for weeks.

As to all other Greens, I advise the grower to look over his plot weekly, and collect all leaves which are turning yellow, for they are of no real service to the plant afterwards. They will all continue to yield these leaves through the winter, and I need hardly say how very useful such are as part diet for the cow or pig. It is *not* their quality alone, although every trifle tells in that respect; but those who know well the needs of animals, know full well that a change is useful occasionally to keep the animal's bowels in order.

I can add little more as to allotment matters this month; January will add a wider field for us: in the meantime, I again repeat, lose not a chance. According to the old saying, "little strokes fell great oaks;" so frequent attentions, though they appear individually trifling, yet, when put together, and their results manifest, plainly prove that well-directed labour, on whatever scale, is not in vain.

R. ERRINGTON.

APIARIAN'S CALENDAR.—DECEMBER.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

FEEDING.—I can only go on to impress upon every keeper of bees (or who wishes to continue so) the necessity of feeding, for I will not hesitate in saying that not one stock

in a hundred will survive the coming winter without it. I am speaking of stocks in this locality, West Suffolk; but I fear, from the accounts I am receiving from different parts of the kingdom, that the absolute necessity of feeding is general.

FOOD.—I believe the best food that can be given, next to honey, which this year will be far too expensive for feeding, is one pound of loaf sugar, one quarter-of-a-pint of water, and one-quarter-of-a-pound of honey, simmered for a few minutes over a slow fire till the sugar is melted, and, when quite cold, given to the bees, and at the top of the hive, if possible.

VENTILATION.—Where bees are in boxes, ventilation is of the next importance to feeding. I have found the best method to secure a perfect ventilation is to leave one of the gratings, or holes at the top of the box, open, from this time till the end of February, and placing over it a small bell-glass or feeder, the vapour will then condense upon the former, and run down outside the box, or upon the glass of the latter, and be caught in the pan.

ENEMIES.—Mice and birds must be carefully looked after, for they are both very busy at this time, and will destroy a stock, sometimes very quickly, if allowed to pursue their depredations unmolested.

FLOOR-BOARDS.—Clean the floor-boards at least once a month, with a dry, hard brush, selecting a mild day for the purpose, and always at the breaking-up of a hard frost.

SNOW.—Whilst snow lies upon the ground, *but not an hour longer*, the entrance of the hives should be stopped with perforated zinc, and not a single bee allowed to leave them.

DISCERNING THE SEX OF A CHICKEN IN THE EGG.

THERE are some observations in *The Poultry Book*, at page 68, on a Treatise, by a Mr. Trotter, in which it is stated, that by examining the situation of the air-cell at the butt end of an egg, the sex of the future chicken can be ascertained. As I have taken some pains to prove whether this theory is correct or not, perhaps a statement of my experiments may be interesting to some of your readers.

It is only right that I should inform you, that in the table below I have only shown the eggs actually hatched, which you may depend upon being correct, as before they were placed under the hens, the expected sex of the chicken was written on each, a copy of which was kept in a book, and such eggs as did not produce a live chicken were duly marked off. Owing, however, to the thickness of some of the Shanghai hen egg-shells, I was unable to discern the situation of the air-cell, and these I marked doubtful.

NO.	SUPPOSED SEX.			RESULTS.		
	COCKS.	HENS.	DOUBTFUL.	COCKS.	HENS.	DIED.
1	0	2	0	0	2	0
2	4	3	0	3	4	0
3	1	4	2	5	1	1
4	2	4	1	5	1	1
5	0	2	0	1	1	0
6	4	1	3	3	4	1

The slight gradations with which position of the air-cells differ in some of the eggs presented a difficulty in assigning either one sex or the other to some of them, I, therefore, determined to try one more experiment, and for this purpose I selected, from a number of eggs, seven which had the air-cell so decidedly to one side, that had Mr. Trotter examined them, I suppose he would, without hesitation, have pronounced the expected progeny to be pullets. The hen succeeded in hatching the whole of them; but one, being weakly, died in a few days, and two others were killed before they were three weeks old; the remaining four I watched with some interest, from day to day, until I could with certainty make out the sex. They are now nearly three months old, and, to my surprise, have proved to be four cockerels; so that I am now perfectly satisfied that the situation of the air-cell has nothing whatever to do with the sex of the chick.—T. S.

POULTRY SHOWS.

WINCHESTER AND SOUTHERN COUNTIES' POULTRY EXHIBITION.—The first meeting of any newly-formed Society is often materially aided by the zeal and energy consequent on novelty and excitement, apart from any consideration of the real utility of the Institution. In matters of graver import than those now about to occupy our attention has this observation been found correct, and thus the second anniversary is frequently a fair test of ultimate success or failure.

The first exhibition of the Winchester and Southern Counties' Society was held at that city in November, 1852, and the 16th and 17th of this month has witnessed the second of their proposed annual meetings. On the former occasion, the expectations of those with whom the idea of the Association had originated were fully realized, and the critical period of the second year has now confirmed their opinion, that the district around that city is a suitable position for the purpose they had in view.

Now, whatever breed of poultry may be found most suitable to our several circumstances, it will certainly be to our ultimate advantage to get the best of their race, and this we are most effectually enabled to do by means of our Exhibitions, which have encouraged a spirit of enquiry and research that has already conferred great benefits, and will, we trust, do still more for poultry-keepers generally. Fowls, Geese, Ducks, and Turkeys, to say nothing of the less important members of the poultry-yard, are now imported from whatever quarter a rumour of excellence may be heard. The points of breeding stock are carefully weighed and mutually adjusted; food and management are attentively studied; and various experiments on the results of cross-breeding between the different varieties of the same family are specially detailed for public information. Hence it follows that a degree of practical knowledge has been attained, for which we should have looked in vain to any other source. We have dwelt on this fact, from our knowledge of the common depreciatory tone in which remarks on Poultry Shows are often uttered. External appearances, distinct from culinary excellence, are there, it is true, held of importance, but never, we believe, to the rejection of greater merits in an economical point of view in any of those classes which base their claims to public consideration on their character as profitable poultry.

Let our readers be assured that the prize Dorking will be, at least, as satisfactory on the spit as any of its defeated neighbours of the same race; the Shanghae, again, victorious from its combination of meritorious features of form and plumage, will, in death, no less than life, maintain its honours; and to carry our comparison to the end, the Toulouse Geese, and the Rouen and Aylesbury Ducks will drive their competitors from the kitchen as easily as they conquered in the Exhibition.

To avert the very suspicion of partiality, the classes, on this occasion, were arranged alphabetically, so *Bantams* had precedence, and the successful birds were of fair average merit.

Shanghaes, in right of their *alias*, Cochin-China, followed; but in the old class for these birds the entries were not numerous, and the unfavourable character of the present autumn had evidently retarded their moult. The first prize for Buff and Cinnamon fell to Mr. Punchard, for Pen 25, containing birds that fully justified the honours of their position. The same gentleman met with similar success in the class for chickens of the same colours, hatched during the year.

There were, also, several commendations in this class, but, in most instances, sufficient attention had not been paid to matching the birds, both as regards their form and feather. The pullets, as usual, were generally of higher pretensions than their companions of the other sex.

Among the *White Shanghaes*, discoloured legs were more numerous than we could have wished, and the difficulty of obtaining "black" cocks, altogether free from bronzed feathers, does not appear to have diminished.

The *Coloured Dorkings* were good, and the prize and commended pens included many very creditable specimens. The birds placed in Pen 110 were selected by the Judges for a second prize, but were subsequently disqualified on

account of their owner having omitted to send the proper ticket with them, so that it was impossible to assign them their proper place, or to know by whom they had been entered. In Class 15, the chickens in Pen 102, belonging to Edward Turner, Esq., of Bishopstoke, were remarkably well-grown, and well-matched birds, promising, at no distant date, to contribute to the merited celebrity of their race. The *White Dorkings* were certainly meritorious, and were exhibited in capital condition; we could wish, however, that there was less tendency manifested in these birds to the unseemly discolouration of the bill.

Among the *Game Fowls* were some fair birds, especially the Duck-wing cocks; but the delicate tone of their plumage would have appeared to greater advantage had the dull slate-colour of their legs been exchanged for a lighter hue. Exhibitors of these birds should carefully remember the distinction between the black-breasted and other reds.

The *Hamburghs*, especially the Silver-spangled, of which latter, Mrs. Mills, of Bisterne, bore off the two first prizes in Class 42, were a much better lot than the southern districts of England are accustomed to produce. The Golden-pencilled cockerel and pullets of Mrs. Ker Seymour, and the Golden-spangled birds of Mr. Rawson, were well-selected pens of great merit.

The same award of praise is due to several pens among the *Poland* classes. The Black, with white crests, had specimens of unusual excellence, especially Pen 178. Of the others, the Silver would take precedence of the Golden.

In *Malays*, there were well-bred specimens of both the Coloured and White varieties.

Since our comments on the *Spanish* classes would not cheer the owners of the pens that were placed in competition, a short word of advice is all to which we will now give utterance. The white face, unimpaired in the effect of its strong contrast with the comb and plumage, is justly required as essential to the perfect specimen of the Spanish fowl. A dark line of feather at the base of the comb, separating it from the face, is therefore fatal; and to this defect there is too often added a blushed or red-stained appearance of the face itself. Now, these birds have, of late, commanded very high prices; and great dissatisfaction is, therefore, often expressed, when pens, on which their owners have based great expectations, are passed over by those to whom the office of judge has been confided. "Why, how can such a decision be just," is a question constantly asked, "when the birds came from such or such a stock?" naming persons whose success with these fowls has become matter of notoriety. Our reply is a very ready one, and is simply this—that probably among fowls of no other kind is there more uncertainty in the character of the produce, even when the parent stock has been selected with the utmost care and judgment. But it really would seem that the purchaser of a sitting of eggs thinks he is most unfortunate if any of the produce fall short of their ancestral excellence. Nowhere, indeed, are patience and perseverance more requisite than in the yard of the Spanish breeder.

Class 59 offered two first and two second prizes for the old and young birds respectively of "any other distinct breeds." The task of the Judges here becomes an onerous duty with great responsibility, both as regards the competition of different varieties of fowls, as also from the necessity of strictly scrutinizing the alleged new introductions. Regarding economy as the only safe basis on which the efforts of the poultry-keeper should be grounded, a wide line of demarcation may be at once drawn between the profit-producing and the mere ornamental, that is, the "toy" poultry. On the present occasion, a very handsome pen of *Andalusian* fowls were awarded a first prize; and since in their merits as layers, and excellence for the kitchen, these fully equal their sable countrymen, they deserved their position.

Among the birds entered as "*Brahma Pootras*" were specimens that manifested a closer approach to the standard of *Shanghae* excellence than any we had yet observed. The lighter birds appeared to most advantage, but a pen of dark Grey were excellent in both form and substance. It was a fair opportunity, therefore, for a rigid search in quest of such properties or characteristics that might be urged on their behalf as a separate and distinct breed; but none such were visible in the birds before us, since nowhere was seen

the peculiar warted "pea-comb" that is occasionally found in this variety, which, to all intents and purposes, may be ranked as "Grey Shanghaes." So far, also, as we have studied their habits, no argument can be found for "specific difference." We have already gradations of colour in Shanghaes far more apart than the position that the so-called Brahma Pootra would assume, as a recognised member of that family, to which we should certainly hail his admission as a happy solution of existing differences of opinion. We were happy to hear that the owner of the pen that took the first prize concurred with us in this view.

There were some good White *Polands* in this class, and several pens of the singular *Plarmigan* birds, a pen of which, belonging to Dr. Burney, of Portsmouth, were deservedly commended, from the admirable condition in which they were exhibited, although, as profitable fowls, their claim to distinction may be questioned. The eccentricity of their form and plumage will probably gain them many admirers among those who may be willing to overlook the more important economical qualifications.

Pigeons were decidedly a good class, especially as regarded the Carriers, Barbes, and Turbits.

The White, as well as the Toulouse *Geese* of Mr. Rawson well-merited their respective prizes. The Aylesbury *Ducks* were both numerous and good, and though of the Rouen few were exhibited, these were meritorious. The *Turkeys* were of fair average quality, but size should be more studied by the owners of them that were then present.

All the birds for travelling by railway were sent off on the evening of the second day, or early the next morning. The Judges were the Rev. W. W. Wingfield, and J. H. Catling, Esq.

Class 1.—BANTAMS (Gold-laced). Cock and two Hens.

1. Prize, Miss Bradshaw, Fair Oak Park. Twenty-five weeks. 4. W. R. Rose, Esq., Lydiard Millicent. One cock and hen, seven months; one hen, three years. Commended.

BANTAMS (Silver-laced). Cock and two Hens.

10. Prize, G. C. Adkins, Esq., Edgbaston, Birmingham.

BANTAMS (White). Cock and two Hens.

12. Prize, Mrs. Mills, Bisterne, Ringwood. Eighteen months. 18. Commended, G. C. Adkins, Esq., Edgbaston.

BANTAMS (Black). Cock and two Hens.

20. Prize, Mrs. Mills, Bisterne. Eighteen months.

BANTAMS (Any other variety). Cock and two Hens.

22. Prize, G. C. Adkins, Esq., Edgbaston. (Buff.)

Class 2.—SHANGHAE OR COCHIN-CHINA. (Cinnamon and Buff.) Cock and two Hens.

25. First prize, Chas. Punchard, Esq., Blunt's Hall, Havershill. More than one year. 23. Second prize, G. C. Adkins, Esq., Edgbaston.

Class 3.—SHANGHAE OR COCHIN-CHINA. (Cinnamon and Buff.) Cockerel and three Pullets, hatched 1853.

61. First prize, Chas. Punchard, Esq., Blunt's Hall. Nine months. 40. Second prize, G. Chase, Esq., Terwick, Petersfield. Eight months. 41. Same. Thirty weeks. Pullets highly commended. 26. John Eason, Esq., Montpelier House, Lambeth. Nine and ten months. Commended. 39. Hon. H. Moreton, Lydiard, Swindon. Cock and two large pullets, 8th of March; small pullet, 6th of June. Commended. 44. G. C. Adkins, Esq., Edgbaston. Seven-and-a-half months. Commended. 46. G. W. Johnson, Esq., Winchester. March 18th, 1853. Commended. 47. Same. April 5th, 1853. Commended.

Class 4.—SHANGHAE OR COCHIN-CHINA. (Cinnamon and Buff.) Cock and Hen.

63. Prize, Rev. J. D. L. Simmonds, Chilcomb, Winchester, May, 1853.

Class 5.—SHANGHAE OR COCHIN-CHINA. (Brown and Partridge-feathered.) Cock and two Hens.

68. Prize, G. C. Adkins, Esq., Edgbaston.

Class 6.—SHANGHAE OR COCHIN-CHINA. (Brown and Partridge-feathered.) Cockerel and three Pullets, hatched 1853.

70. First prize, Rev. E. H. Kittoe, Chadwell Rectory. Six months. 69. Second prize, W. Cave, Esq., Hartley Wintney. March.

Class 8.—SHANGHAE OR COCHIN-CHINA. (White.) Cock and two Hens.

74. First prize, B. Holmes, Esq., 112, New Street, Birmingham. Cock, thirteen months; hens, fifteen months.

Class 9.—SHANGHAE OR COCHIN-CHINA. (White.) Cockerel and three Pullets, hatched 1853.

76. First prize, G. Chase, Esq., Terwick. April. 77. Second prize. Same. 81. C. Rawson, Esq., The Hurst. April 30th, 1853. Cockerel highly commended.

Class 11.—SHANGHAE OR COCHIN-CHINA. (Black.) Cock and two Hens.

83. First prize, B. Holmes, Esq., Birmingham. Sixteen months. 85. Second prize, C. Rawson, Esq., The Hurst. 1853.

Class 12.—SHANGHAE OR COCHIN-CHINA. (Black.) Cockerel and three Pullets, hatched 1853.

90. Prize, Mr. W. P. Flight, Winchester. June 20th. 88. B. Holmes, Esq., Birmingham. Five months. Pullets commended.

Class 14.—DORKING. (Coloured.) Cock and two Hens.

100. First prize, Mr. Dutton, Streatham Common. Twenty-one months. 101. Second prize, W. G. Chambers, Esq., Portsmouth. Two years. 96. Dr. Wesley, Winchester. Commended.

Class 15.—DORKING (Coloured). Cockerel and three Pullets, hatched 1853.

102. First prize, Edward Turner, Esq., Bishopstoke. Pullets, twenty-nine weeks; cockerel, twenty-five weeks. 109. Frederick Bernal, Esq., Fareham, Hants. Twenty-three weeks. Commended. 114. Mr. Dutton, Streatham Common. Eight months. Commended. 117. Mr. H. B. Higgs, Southampton. Seven months. Commended. (The whole class highly meritorious.)

Class 17.—DORKING (White). Cock and two Hens.

120. First prize, Mrs. Mills, Bisterne. 123. Second prize, Mrs. Boucher, sen., Sheffield.

Class 18.—DORKING (White). Cockerel and three Pullets, hatched 1853.

124. Prize, N. Antill, Esq., Portsea. Eight months.

Class 23.—GAME FOWL (Black-breasted and other Reds). Cock and two Hens.

127. Second prize, Mrs. Ker Seymour, Hanford, Blandford. Aged. 129. Mr. W. Deazley, Dunbridge Station. Two years. Cock commended.

Class 24.—GAME FOWL (Black-breasted and other Reds). Cockerel and three Pullets, hatched 1853.

130. Second prize, Mr. W. Deazley, Dunbridge Station. Seven months.

Class 25.—GAME FOWL (Black-breasted and other Reds). Cock and Hen.

131. Prize, Mr. W. Deazley, Dunbridge Station. Two years.

Class 29.—GAME FOWL (Duck-wings and other Greys and Blues). Cock and two Hens.

133. First prize, Mr. W. Deazley, Dunbridge Station. Two years. 136. Second prize, Mr. A. Mundy, Winchester. Sixteen months.

Class 30.—GAME FOWL (Duck-wings and other Greys and Blues). Cockerel and three Pullets, hatched 1853.

138. Prize, Mr. Mundy, Winchester. Eight months.

Class 33.—GOLDEN-PENCILLED HAMBURGH. Cockerel and three Pullets, hatched 1853.

140. Prize, Mrs. Ker Seymour, Hanford. Seven months.

Class 35.—GOLDEN-SPANGLED HAMBURGH. Cock and two Hens.

147. First prize, C. Rawson, Esq., The Hurst. Aged. 146. Second prize, G. C. Adkins, Esq., Edgbaston.

Class 36.—GOLDEN-SPANGLED HAMBURGH. Cockerel and three Pullets, hatched 1853.

150. Prize, Mr. Edwards, Lyndhurst. Six months.

Class 38.—SILVER-PENCILLED HAMBURGH. Cock and two Hens.

152. First prize, G. C. Adkins, Esq., Edgbaston. 151. Second prize, Mrs. Ker Seymour, Hanford. Sixteen months.

Class 39.—SILVER-PENCILLED HAMBURGH. Cockerel and three Pullets, hatched 1853.

155. Prize, Mrs. Mills, Bisterne.

Class 41.—SILVER-SPANGLED HAMBURGH. Cock and two Hens.

162. First prize, C. Rawson, Esq., The Hurst. Aged. 163. Second prize. Same.

Class 42.—SILVER-SPANGLED HAMBURGH. Cockerel and three Pullets, hatched 1853.

166. First prize, Mrs. Mills, Bisterne. 167. Second prize. Same.

Class 44.—MALAY. Cock and two Hens.

172. First prize, A. C. Sayers, Esq., Clanville House. Two years. 173. Second prize, G. C. Adkins, Esq., Edgbaston.

Class 45.—MALAY. Cockerel and three Pullets, hatched in 1853.

175. Prize, A. C. Sayers, Esq., Clanville House. Eight months.

Class 47.—POLAND FOWL (Black with White Crests). Cock and two Hens.

178. First prize, Mrs. Mills, Bisterne. 181. Second prize, Mr. Edwards, Lyndhurst. Two years.

Class 48.—POLAND FOWL (Black with White Crests). Cockerel and three Pullets, hatched in 1853.

185. Prize, Mr. Edwards, Lyndhurst. Six months. 183. G. C. Adkins, Esq., Edgbaston. Eight months. Pullets commended.

Class 50.—POLAND FOWL (Golden). Cock and two Hens.

188. First prize, G. C. Adkins, Esq., Edgbaston. 189. Second prize, C. Rawson, Esq., The Hurst. Aged.

Class 51.—POLAND FOWL (Golden). Cockerel and three Pullets, hatched in 1853.

190. Prize, C. Rawson, Esq., The Hurst. May, 1853.

Class 53.—POLAND FOWL (Silver). Cock and two Hens.

192. First prize, G. C. Adkins, Esq., Edgbaston. 195. Second prize, P. Jones, Esq., Fulham. Eighteen months.

Class 54.—**POLAND FOWL** (Silver). Cockerel and three Pullets, hatched in 1853.

199. Prize, Mr. Edwards, Lyndhurst. Five months.

Class 55.—**POLAND FOWL** (Silver). Best Cock and Hen.

200. Prize, C. Rawson, Esq., The Hurst. Aged.

Class 56.—**SPANISH**. Cock and two Hens.

204. Prize, C. Rawson, Esq., The Hurst. Aged.

Class 57.—**SPANISH**. Cockerel and three Pullets, hatched in 1853.

208. Prize, C. Rawson, Esq., The Hurst. April, 1853. 205. Lady M. Macdonald, Woolmer. May. Commended.

Class 59.—**ANY OTHER DISTINCT BREED**. Cock and two Hens, and Cockerel and two Pullets.

217. First prize, Mrs. Mills, Bisterne. (Andalusians.) 225. First prize, G. C. Adkins, Esq., Edgbaston. Eight months. (Brahma Pootra.) 223. Second prize, Dr. Gwynne, Sandbach, Cheshire. Cock, March; pullets, May and June. (Brahma Pootra.) 226. Second prize, P. Jones, Esq., Fulham. Cockerel, six months; pullets, five months. (Brahma Pootra.) 230. Second prize, Mr. Dutton, Streatham. Aged. (White Poland.) 214. Dr. Burney, Brookhurst, Gosport. Twenty-three weeks. (Ptarmigan.) Commended. 219. G. C. Adkins, Esq., Edgbaston. (Silk Fowls.) Commended. 224. W. Cave, Esq., Hartley Wintney. July, 1853. (Brahma Pootra.) Commended. 231. Mr. W. P. Flight, Winchester. April. (White Poland.) Commended. 233. Mr. H. B. Higgs, Southampton. Age not known. (Frizzled Fowls.) Commended.

Class 60.—**PIGEONS**. For the best pair of each variety.

235. Prize, Mrs. Ker Seymour, Hanford, Blandford. Aged. (Antwerps.) 237. Prize, G. C. Adkins, Esq., Edgbaston, Birmingham. (Archangels.) 238. Prize. Same. (Australian.) 239. Prize. Same. (Barbes.) 240. C. Rawson, Esq., The Hurst. One year. (Barbes.) Commended. 244. Prize, G. C. Adkins, Esq., Edgbaston. (Carriers.) 248. W. Case, Esq., Fareham. Three years. (Carriers, Black.) Commended. 249. John Colson, Architect, Winchester. Age not known. (Carriers, Black.) Commended. 251. W. Case, Esq., Fareham. Three years. (Carriers, Blue.) Commended. 254. Prize, G. C. Adkins, Esq., Edgbaston. (Fantails.) 255. C. Rawson, Esq., The Hurst. One year. (Fantails.) Commended. 261. R. Bayspool, Esq., Winchester. Age not known. (Jacobins, Black.) Commended. 262. Prize. Same. (Jacobins, Fawn.) 263. Prize, G. C. Adkins, Esq., Edgbaston. (Nuns.) 266. Prize, G. C. Adkins, Esq., Edgbaston. (Owls.) 270. Prize, G. C. Adkins, Esq., Edgbaston. (Pouters.) 273. G. C. Adkins, Esq., Edgbaston. (Runts.) Commended. 274. Prize, C. Rawson, Esq., The Hurst. One year. (Runts.) 277. Prize, C. Rawson, Esq., The Hurst. One year. (Swallows.) 280. Prize, G. C. Adkins, Esq., Edgbaston. (Tumblers, Almond.) 283. Prize, Dr. Wesley, Winchester. (Tumblers.) 291. Prize, G. C. Adkins, Esq., Edgbaston. (Trumpeters.) 295. Prize, Rev. C. R. Pettat, Ashe. (Turbits.) 296. Mr. Gillingham, Winchester. Aged. (Turbits.) Commended. 297. John Colson, Winchester. Age not known. (Turbits.) Commended.

Class 61.—**DUCKS**. Drake and two Ducks of each variety.

300. First prize, John Eason, Esq., Montpellier House. Seven months. (Aylesbury.) 304. Rev. E. H. Kittoe, Chadwell. Sixteen weeks. (Aylesbury.) Commended. 308. Mr. Edwards, Lyndhurst. Six months. (Aylesbury.) Commended. 310. First prize, John Wickham, Esq., Sutton Scotney. June. (Rouen.) 311. Second prize, C. Punchard, Esq., Blunt's Hall. Seven months. (Rouen.) 314. Second prize, Mrs. Mills, Bisterne. (Black.) 315. First prize, Lady M. Macdonald, Woolmer. April. (Buenos Ayres.) 318. C. Punchard, Esq., Blunt's Hall. Seven months. (Labrador.) Commended.

Class 62.—**GEESE**. For the best Gander and two Geese.

321. First prize, C. Rawson, Esq., The Hurst. 1852. 320. Second prize. The same. Aged.

Class 64.—**TURKEYS**. Turkey Cock and two Hens.

329. First prize, C. Rawson, Esq., The Hurst. 1853. 327. Second prize, Lady M. Macdonald, Woolmer. 325. The same. Commended.

SOUTH DEVON AND NEWTON ABBOTT AGRICULTURAL SOCIETY AND POULTRY SHOW.—This was held at Newton Abbott, on the 8th of November.

The collection of Messrs. William E. Rendle and Co., seedsmen, Plymouth, comprised some very superior bulbs, and among them we noticed the far-famed "Orange Jelly Turnip," which was exhibited in much perfection. The seed was not sown till August, and the bulb was of a good size; this will prove a most excellent turnip for late sowing. We also observed some very fine bulbs of Mr. Rendle's Purple Top Swede, a sort now coming into general use. It is a very hardy variety, and produces a great bulk per acre. We understand that it is very much esteemed by all who have grown it. There were also specimens of Skirving's Improved Swede—a well known sort of established merit—and by their side some beautiful specimens of Laing's Symmetrical variety, as also some good roots of Matson's Swede, Ashcroft Swede, Rivers' Early Stubble Swede—a sort held in high repute as a late sowing variety—the Yellow or Tankard Swede, Green Top Scotch Turnips, Hood's Imperial Yellow, and Skirving's Purple Scotch, Green Top, Bullock, Lincolnshire Red Globe, Purple Top Aberdeen, Gordon's Yellow Globe, a most valuable Scotch Turnip, presented to the Exhibitors by Alexander Gordon, Esq., Culter House,

Aberdeen; Rivers' Large Yellow Stone, the Woolton Hybrid, Dale's Hybrid, and several others of established merit.

THE POULTRY SHOW.

This show originated by M. Cartwright, Esq., Ford House, Newton, and brought to its present state by the labours of that gentleman and Mr. Flamank, the secretary.

The award of prizes, which was made under the judgment of the Rev. Grenville F. Hodson, Banwell, Somerset, and Edward Vivian, Esq., Torquay, was as follows:—

Class 1.—**DORKING**. Cock and two Hens.

First prize, Mr. John Fortescue Pearce, Lower Newton, Whimple. Age, five months. Second prize, Miss Caroline Newman, Mamhead Park, Starcross. Hatched 11th of May, 1853.

Class 2.—**SPANISH**. Cock and two Hens.

First prize, Miss Dyott, 2, Torwood Mount, Torquay. Age, seven months. Second prize, Mr. J. B. Ford, Ide, near Exeter. Age, cock upwards of one year; hens various.

Class 3.—**COCHIN-CHINA** (Buff or Cinnamon). Cock and two Hens.

First prize, Mr. William Channing, Heavitree, Exeter. Age, cock, seven months; one pullet, six months; one pullet, five months. Second prize, Mr. Philip Paige, Torquay. Buff. Age, cockerel, five-and-a-half months; hen, fourteen months; pullet, nine months.

Class 4.—**COCHIN-CHINA** (Dark). Cock and two Hens.

Second prize, Mr. John Stark, Harefield, Torquay. Partridge. Age, not known.

Class 5.—**GAME**. Cock and two Hens.

First prize, Mr. H. Brown, Barton Hall. Black-breasted reds. Age, five-and-a-half months. Second prize, Mr. John F. Mortimer, Mill-street, Plymouth. Age, six-and-a-half months.

Class 7.—**GOLDEN-PENCILLED HAMBURGH**. Cock and two Hens.

First prize, Dr. Rogers, Honiton. Age, cockerel four months; pullets six months. Second prize, Mr. Wm. W. Rowe, Milton Abbott, Tavistock.

Class 8.—**SILVER-PENCILLED HAMBURGH**. Cock and two Hens.

First prize, Mr. Charles E. Phillpotts, Bishopstowe, Torquay. Hatched 8th of April, 1853. Second prize, Mr. Wm. W. Rowe, Milton Abbott, Tavistock.

Class 9.—**GOLDEN-SPANGLED HAMBURGH**. Cock and two Hens.

First prize, Mr. Wm. K. Spragge, the Quarry, Paignton. Age, fifteen weeks. Second prize, Mr. Augustus Paul, of ditto. Age, about eight months; one hen, eighteen months.

Class 10.—**SILVER-SPANGLED HAMBURGH**. Cock and two Hens.

First prize, Mr. Augustus Paul, Adwell Lodge, Torquay. Age, six months. Second prize, Mr. Augustus Paul, Adwell, Torquay. Age, two years.

Class 11.—**POLAND FOWL** (Gold or Silver-spangled). Cock and two Hens.

First prize, Mrs. Prideaux, Mount Plym, Totnes. Silver. Age, six months. Second prize, Mr. Wm. W. Rowe, Milton Abbott, Tavistock. Silver-spangled. Age, one year.

Class 12.—**POLAND FOWLS** (Black-white tops). Cock and two Hens.

First prize, Miss Dyott, 2, Torwood Mount, Torquay. Age, not known.

Class 13.—**BARN-DOOR FOWLS** (Hybrids). Cock and three Hens.

First prize, Mr. Charles Langley, Chudleigh. Hybrids, cross between the Cochinchina and Spanish. Age, six months. Second prize, Mr. John F. Mortimer, Mill-street, Plymouth. Hybrid, between Cochinchina and Game. Hatched 23rd of April, 1853.

Class 14.—**BANTAMS**. Cock and two Hens.

First prize, Mr. William Connott, of Exeter. Black. Age, three years. Second prize, Mr. William Vickers, 2, Cobourg Place, St. James, Exeter. White. Age, seven months.

Class 15.—**BANTAMS** (Gold or Silver-laced). Cock and two Hens.

First prize, Mr. J. G. Gully, Queen-street, Exeter. Gold-laced or Sebright. Age, two years. Second prize, Mr. George Crocker, 19, King-street, Plymouth. Gold-laced. Age, various.

Class 16.—**Special prize for the best Cock and three Pullets of any breed, Chickens, hatched since the 24th of June last.**

First prize, Mr. John R. M. Hernaman, Hill's Court, Exeter. Hatched in July. Second prize, Mrs. Prideaux, Mount Plym, Totnes. Silver-pencilled Hamburg. Age, eleven weeks.

Class 17.—**TURKEYS**. Cock and two Hens.

First prize, Mr. William W. Rowe, Milton Abbott, near Tavistock. Age, cock, two years; hens, five months. Second prize, Mr. Henry Adney, Lymington. Age, three years.

Class 18.—**DUCKS**. Drake and two Ducks.

First prize, Mr. W. Rowe, of Milton Abbott. Aylesbury. Age, five months. Second prize, Mr. B. J. Ford, Ide, near Exeter. Aylesbury. Age, various.

Class 19.—**GEESE**. Gander and two Geese.

Second prize, Mr. W. W. Rowe, Milton Abbott, near Tavistock. Age, two years.

TO CORRESPONDENTS.

PETUNIAS (Moira).—Your Petunias are all good, and you cannot do better than cultivate them in the way you propose. You may add, with advantage, the following:—Shrubland Rose, Beauty of Sudbury, Fairy Queen, Lady Cullum, Rosetta, and Virginium. You ask, how you should treat them through the winter? Keep them gently growing, and nip off the top once a month, to keep them bushy.

CONCRETE WALKS (A Subscriber from the Beginning).—Mr. Appleby says his is a trade secret; but we have never found any difficulty in making them. The coal-tar sets quicker if boiled; but used cold it will do. We use lime-rubbish sifted fine, mixed with pebbly gravel in equal proportions. We mix these with the coal tar until as thick as mortar—all the materials being very dry—and spread it about two inches thick. In a day or two we sprinkle some fine gravel over the surface, and then pass over it a very light roller, or beat it smooth.

WRIGHT OF GOSLINGS.—Mr. Trotter's remarks on the weight of young Geese must have arisen from some misconception of our meaning in the passage he refers to. We should, perhaps, have expressed ourselves more clearly, had we said, "of Geese as commonly seen," instead of "common Geese;"—since, when the selection of breeding-stock and their subsequent management have been duly attended to, weights, such as those referred to by that gentleman, are certainly attainable in birds not of the Embden or Toulouse breeds. But that 11 lbs. is an average "store," not "fatted" weight for the young Geese ordinarily found, at Michaelmas, in English farm-yards is, we believe, a correct statement, and we are speaking solely of such a general average. Hence the inference, that the larger breeds deserve more notice than they have hitherto gained in the farmer's estimation.

DISEASED LEAVES OF CAMELLIAS, &c. (Annie).—We should think the leaves of the *Camellias* were either injured before they came out of the house in spring, from being burned by spots in the glass, or had a rusty drop on them. Even behind a north wall, as in your case, we have had similar appearances by a part of the plant standing above the wall, whilst the rest of it was shaded by it. If the plants are healthy, these will soon be replaced by other healthy leaves. The *Daphne* generally loses some of its lower leaves; if all are affected, the plant is very likely over-watered, owing to bad drainage. The *Euphorbia* takes the withered appearance on its lower leaves whenever it is subjected to too much wet and a low temperature. It requires from 55° to 60° to open its flowers kindly; it will then stand in from 5° to 10° lower. See an article to-day by Mr. Fish.

PLANTS FOR BACK OF MELON-HOUSE (T. S.).—If you told us more about the height, &c., of the back of your cucumber and melon house, we could advise better, and the time you intended to use the house for cucumbers. Nothing ornamental could flourish in summer owing to shade. If you wished it merely to be green, the *Ficus stipulacea* would soon cover it and look pretty. Your cucumbers, &c., should be fifteen or eighteen inches from the glass. You can have vapour beneath by pouring water so as to reach the heating medium there. Two or three lines with a pencil would have enabled us to see the matter more clearly.

PROFITABLE POULTRY (A Young Yorkshireman).—If you wish to breed good chickens, and have a good supply of eggs, have a first-rate Dorking cock and five large Shanghae (Cochin-China) pullets.

CAPONIZING (S. S.).—It is too cruel, too needless, and too objectionable a subject for us to discuss.

POULTRY MIXING TOGETHER (Ibid).—If you let different varieties communicate you will have cross-bred chickens, beyond all doubt. There is no mode of making them constant like Pigeons.

CRICKET GROUND (H. H. M., Oxford).—The water at the end of the drain, we think, will not injure the turf. It will probably keep it a little more green in summer than in other parts.

GARDENERS' CALENDAR (Sarah Roope).—There is a condensed one of the Kitchen Garden.

RUSTIC WORK (Constantia).—Mr. Howlett's pamphlet may be had of Messrs. Jarrold and Sons, Booksellers, 47, St. Paul's Churchyard.

HOME-MADE WINE.—R. H. I. has some which "tastes of the Cask." He wishes to know if any has made of removing this objectionable flavour.

NANKEREN BANTAMS (Bootham).—The combs should be double.

COMBS OF WHITE DORKINGS (Moira).—In our opinion, the single comb is handsomest; but taste is arbitrary, and judges require that those exhibited shall have double combs. Captain Hornby sells his Shanghae eggs. His address is, "Knowsley Cottage, Prescott, Lancashire."

COMMENDED BIRDS (F.).—The copy you ask for is sent. It is quite true, that commended birds at large shows are probably equal to prize birds at small shows; and we, therefore, publish them. We cannot do so invariably because of the space they occupy.

STOVE IN CONSERVATORY (M. B.).—We cannot recommend any stove for it that has no flue. Can you not have a tank that can be filled with boiling water?

PENS FOR POULTRY TRAVELLING (E. I.).—Stout, closely-wattled, wicker baskets are best—square, and with the entire lid to open. If you do not mind expense, Mr. Gray's, as noticed and engraved in our columns, is very desirable.

NAMES OF FRUITS (G. H.).—The round APPLE is a *Golden Reinette*, and the long one the *Nelson Codlin*. The PEAR is *Beurre de Rance*.

FEEDING BEES (C. H.).—None of your stocks will require feeding at present. Try them again about the end of January.

REIGATE SHOW.—The Rev. J. Boys, of Biddenden, took a first prize for Dorkings, and not a second, as stated.

NAMES OF FRUIT (J. M.).—PEARS. No. 1. *Nelis d'Hiver*. 3. Apparently a small *Beurre Die*. 4. *Beurre d'Arenberg*. 6. *Napoléon*. 7. *Catibasse Bosc*. 8. *Kaster Beurre*. 9. *Glout Moreau*. 11. Seems a small *Bishop's Thumb*, but decayed. 12. *Snoan's Egg*. APPLES.—No. 1. *Hormead Pearmain*. 2. *Bedfordshire Foundling*. 3. *Nonesuch*. 4. *Hubbard's Pearmain*.

CALENDAR FOR DECEMBER.

ORCHID HOUSE.

AERIDES, Saccobulbium, and similar plants, keep moderately dry. **AIR:** excepting on very fine, bright, sunny mornings, when the heat of the sun and the fire combined raise the temperature too high, no air will be required this month. **BLOCKS**, plants in, syringe when the sun is likely to shine. **BASKETS** with plants in, that are growing, dip in tepid water two or three times; those not growing dip only once. **BASKETS (new)**, make to be ready when wanted. **COCKROACHES**, search for diligently, and destroy; lay poison for them; the best is candle ends crushed and mixed with arsenic—this is a sure destructive agent. **HEAT**, moderate, to induce rest; day, with sun, 70°; without, 65°; night, 55° to 60°. **INSECTS**, destroy diligently; one pair destroyed this month will prevent a numerous brood next year. **MOISTURE IN THE AIR**, supply to plants growing. **Pot growing plants:** several will start this month; do this before new roots are formed. **PEAT**, procure; choose the most fibrous; the best is found in dry woods, where the Common Brake (*Pteris aquilina*) abounds; the roots of this fern form the best fibrous peat. **STANHOPEAS**, in baskets, beginning to grow, put into fresh baskets with fresh peat; four inches deep is quite sufficient. **WATER** at the roots, apply only to growing plants, and that round the edges of the pots. **YOUNG SHOOTS**, look to, and keep the centre dry, or they will rot. T. APPELEY.

PLANT STOVE.

AIR, give on all favourable occasions. **ACHIMENES**, pot a batch to flower early. **AMARYLLIS**, pot a portion, and plunge in a moderate tan-pit to flower early. **BEGONIAS**, to bloom early, repot. **CLEODENDRUMS** beginning to grow, repot towards the end of the month; place in heat, and water moderately. **FRANTHEMUMS**, winter-flowering, water freely, and occasionally with liquid-manure. **FERNs**, repot small plants; reduce the water to old ones; cut down decaying fronds. **FRANCISCA**, pot a few, and place in heat, to flower early. **GARDENIAS**, pot a batch, wash every leaf, and place in dung heat, to start them to grow, and kill insects on them, especially the red spider, the great enemy of Gardenias. **GESNERAS** showing signs of growth, shake out of old soil, and pot in fresh compost; give little water and moderate heat till next month. **GLOXINIAS**, treat a few similarly. **HOYA BELLA**, a new and beautiful species, put in baskets, and train downwards. **IKORAS**, keep cool, and moderately dry, through the month. **LUCILIA GRATISSIMA**, in flower, remove into a greenhouse, to prolong the bloom. **LYCOPODS**, divide and repot. **PASSIFLORA**, and other climbers, prune, and tie neatly in. **PLANTS TO FORCE**, such as *Azaleas*, *Persian Lilacs*, *Rhododendrons*, *Roses*, &c., place in a forcing-house, to bring them on to flower early. **ROGIERAS**, a genus of winter-blooming plants, should be now showing flowers. **SERICOGRAPHIS GUEISEBRECHTIANA**, another addition to our winter-flowerers, repot, and water freely after the blooms are visible. **TAN-BEDS**, renew, to keep up a good heat through the winter. In every department of the stove let cleanliness prevail; clear the surface of the pots of moss and lichen; stir up the soil carefully, without injuring the roots; search diligently for insects; keep the walls and floors as dry and clean as possible; remove decaying leaves as soon as they occur; wash pots with plants in that have become green; and let neatness be the general order of the day throughout the month. T. APPELEY.

GREENHOUSE.

AIR, admit freely when the external temperature is above 35°, especially among hard-wooded plants not desired to have early in bloom. Those growing freely, or in bloom, should have an average temperature at night of 45°. A warm greenhouse should be seldom lower. **AZALEAS** for late blooming, keep cool; those swelling their buds not below 45°. **BULBS**, well-rooted in pots, place in gentle heat for early blooming; put funnels of paper over the *Hyacinths*, to cause the stems of the early ones to rise freely; keep mice from the successions; few things are better for this than chopped furze. **CAULCEOLARIAS**, **CINERARIAS**, **CAMELIAS**, &c., attend to with heat and moisture, according to the time you desire them to be in bloom; the two first will require frequent fumigating. **CHRYSANTHEMUMS**, water freely with manure water. **CLIMBERS**, prune generally, to give light to the plants beneath them. *Passion-flowers* may be pruned back to within a bud of the main shoots. *Tecoma jasminoides* will bloom best on longish, strongish shoots; the smaller, therefore, should be cut out; after the strength is thus moderated, by these flowering profusely, it may be spurred back, like *Passion-flowers*. Train and clean winter-flowering climbers, such as *Kennedy's Marygalla*, and various *Tropaeolums*, such as *tuberosum* and *pentaphyllum*; the latter, started in summer, will bloom all the winter, but the best for this purpose, in a warm greenhouse, is *Lobbianum*. **EARTH** in pots and borders keep fresh by stirring. **GERANIUMS**, encourage the forwardest, when early blooming is desirable, with plenty of air, and a medium temperature of 45°, giving them plenty of air, and tying them out. *Scarlets*, taken up from flower-beds, and kept in boxes and sheds, keep dry. Keep old *Calceolarias*, so raised, moist. **HEATHS**, keep cool, and give abundance of air in mild, clear weather. **HEAT**, by fires, apply when necessary; use a little covering in severe weather in preference to making the fires strong. **IXIAS**, **GLADIOLI**, and the harder **LILIES**, pot and set in a cold pit, to be protected from frost. **INSECTS**, keep under, by fumigating and scrubbing. **LEAVES**, dirty, wash; decayed, remove. **MIGNONETTE**, take in a few pots now and then. **OXALIS**, give winter-blooming ones, such as *lobata*, plenty of light and water. **POINSETTIA PULCHERRIMA** will make a warm greenhouse now gay for several weeks. **PRIMULA (Chinese)**, introduce; water with liquid-manure when it shows the flower-bud; the double-white give a favourable and warm position; as the flower stands well when cut it is valuable for nosegays. **ROSES**, and other **SHRUBS**, introduce for forcing; commence at first with a top temperature of from 45° to 50°; if the bottom-heat is from 5° to 10° higher, all the better. **SALVIA SPLENDENS**, supply liberally with water, and give it a warm corner. *Gesnera zeybrina* will still be a good accompaniment where the average night temperature is 45°. *Salvia gesnera-*

floa will succeed *splendens* in the spring. **SUCCULENTS**, keep dry, and *Cactus* especially, except the *truncatus*, which will now be in bloom; give it a warm position, or the blooms will not open freely. The same may be said, as respects position, in the case of *Oranges* opening their bloom. **WATER** seldom; be regulated by temperature, evaporation, and the wants of the plants; when the flower-buds are swelling and opened, give it oftener, and after breakfast, and with the liquid rather higher than the temperature of the house. **TEMPERATURE**, 45° during the day, 40° at night, with 5° to 10° more, at a warm end, or a conservatory, for placing tenderer and forced flowers when first introduced, allowing in each case a rise of 10° or 15° for sun heat. In severe weather, prefer covering, even during the day, to large fires; comparative darkness in a low temperature, for a short time, is preferable to light and a parched atmosphere. Young plants just potted-off, or in their cutting pots, suffer often at this season from two opposite causes. First, in the windows of sitting-rooms—the dry air exhausts them; and here, instead of soaking the roots, sponging and sprinkling the foliage is the preventive. In pits and frames without fire-heat, with all the air you can give, some will damp off. Avoid everything of a wet or fermenting material against the walls or boarding. Two or three inches of thick wheat straw tied firmly against them will help to keep the inside both warm and dry.

R. FISH.

FORCING HOUSE.

AIR, see *Ventilation*. **ASPARAGUS**, promote succession crops; bottom-heat 70°; plenty of air when up. **APRICOTS**, see *Peach*. **BOTTOM-HEAT**, sustain generally about 72° to 76°. **CUCUMBERS**, top dress; apply liquid-manure and stop, and keep glass clean over head; air heat, 60° to 70°. **CHERRIES**, see *Peach*. **COVERINGS**, apply assiduously, so as to be able to give air frequently. **FINES**, use discreetly, to repel frost, to sustain the proper temperature, and to be able to give air rather liberally. **FIGS**, see *Peach*. **GLASS**: wash all roofs. **GRAPES**, late fruit, fire freely in the day, with much air; avoid spilling water in house, and use the syringe once a-week thoroughly. **INSECTS**, extirpate, now is the time; do not forget the soft-soap, the sulphur, the sponge, and fumigation. **KIDNEY-BEANS**, pot in five-inch pots, four in a pot; the *Duns* and *Newington Wonder*; light, secure by all means; keep glass clean washed. **MUSHROOMS**, temperature, 50° to 55°; plenty of air moisture. **NECTARINE** and **PEACH** in blossom, keep at about 55° by day, at night about 40°; water very sparingly; shake branches gently, to distribute the pollen; stir earth around often. **PINES**, secure 60° to 70° to fruiters, with plenty of air; bottom-heat, 77° in dung-pits; keep hardy by plenty of air, and good linings; no water until the end of January. **ROOTS**, protect in all tubs, boxes, pots, &c. **SEA-KALE**, provide successions; bottom-heat 70°. **STRAWBERRIES**, introduce about the middle of December, earlier is not safe; begin at 50° in heat, and a bottom-heat 60°. **TAREAGON**, **MINT**, **SORREL**, **MARJORAM**, &c., introduce to bottom-heat. **LEAF** follow in a ratio to the light, at any period. **VENTILATE** as freely as you dare at all times. **VINES**, to force, begin at 50°; in blossom, maximum, 70°; keep air moist, and get a warmth in border of 75°; sulphur freely; remember the dreaded mildew. **WATER**, apply always in a tepid state.

R. ERRINGTON.

FLOWER GARDEN.

ANEMONES, defend in bad weather; plant, if mild, for the last time till February. **AURICULAS**, defend in inclement weather. **BULBS** omitted, may be planted if the weather be mild (See November). **CARNATIONS**, defend in inclement weather. **COMPOSTS**, prepare. **CROCUSES**, take up and pot in lumps, to force in pits. **DIG** over borders, and dress all quarters generally. **EDGINGS**, trim. **FIBROUS-ROOTED** perennials and biennials, divide and plant. **FLOWERS**, (choice), defend generally from inclement weather. **GRASS**, roll occasionally, if winter be mild. **GRAVEL**, roll and keep orderly. **HAWTHORN**, gather berries and bury in sand, to sow next October. **HEDGES**, plant, and clip deciduous ones. **HYACINTHS**, defend in inclement weather. **LEAVES**, collect for compost. **MULCH** round the roots and stems of shrubs newly planted. **PLANT** shrubs of all kinds. **POTTED PLANTS**, protect in deep frames, &c.; place in hothouse for forcing. **PRIVET**, gather seeds of, and make young shoots into cuttings in bad weather; lay them in damp sand or soil, and set next February. **PRUNE** all shrubs requiring regulation. **PRUNED ROSES**, scrape bark, and wash with lime and soot. **RANUNCULUSES**, defend in bad weather; plant, if mild; seedlings of them require protection. **STAKE** shrubs newly planted, and any others requiring support. **SUCKERS** may be planted as removed during the winter dressing. **TULIPS**, defend in bad weather. **TURF** may be laid in open weather. **UNCOVER** protected plants, and, if not dry, place dry materials next them. **WATER** in glasses, change weekly; add a few grains of salt, or five drops of spirit of hartshorn. Buy all your **TREES** and **SHRUBS** forthwith, and put them in ground, preparatory for final planting in February. Think on the **ICE-HEAP**, and let leaves be gathered to cover it. See, also, that the ponds of water from which you get ice are freed from leaves and sticks, &c.

D. BEATON.

FLORISTS' FLOWERS.

AURICULAS and **POLYANTHUSES**, protect from severe frost; give air on every fine day; keep as dry as possible without flagging; remove decaying leaves, and stir the surface of the soil occasionally. **CALCEOLARIAS**: seedlings transplant; seed may yet be sown. **CARNATIONS** and **PICOTEES**, shelter from frost, snow, and heavy rains; give air on fine days, even to pulling off the glass; in wet weather give air by propping up the light behind; water, if very dry; watch for slugs, and destroy them. **CINERARIAS**, protect from frost; repot seedlings. **CHRYSANTHEMUMS**, give occasional supplies of liquid-manure to, to bring out the later blossoms. **DAHLIAS**, examine; cut off any decaying part to the quick; protect from frost. **FUCHSIAS**, cut off young wood, and keep the plant dry. **HOLLYHOCKS** may be planted in open weather; mulch with short litter; cuttings pot off, and seedlings transplant. **HYACINTHS** in beds, shelter from frost, by mulching. *Hyacinths in pots*, place a few in heat, to bloom early; in glasses, wash the roots in pure water, to cleanse off the green slime; give them fresh water in the glasses. **TALL**

LOBELIAS, take up, pot, and pack away in a shed, till they make fresh plants. **RANUNCULUS BEDS**, prepare. **TULIP BEDS**, shelter from frost, heavy rains, and snow; finish planting, b. **VERBENAS** in frames, give abundance of air to; if mildew prevails, dust with sulphur; protect from hard frost; water seldom, and only then when absolutely necessary; pick off decaying leaves. In this month **FRESH SOILS** may be procured; **LEAVES** collected; **HEAPS** of manures, loam, and peat, frequently turn over to sweeten and pulverise.

T. APPELEY.

ORCHARD.

ALMONDS, plant. **APPLES** (Espalier), prune, &c.; plant, &c. **APRICOTS**, plant. **BRINE**, apply with a scrubbing-brush to stems and branches of fruit-trees, to destroy insects, eggs, and moss. **COMPOST**, provide. **CHERRIES** (Wall and Espalier), prune and train; plant. **CESNUTS**, plant. **CURRENTS**, prune; plant. **CUTTINGS** of Gooseberries and Currants may be planted. **ESPALIERS**, prune and regulate. **FIGS**, protect from frost. **FILBERTS**, plant. **FORK** the surface around fruit-trees. **FRUIT-ROOM**, ventilate occasionally, and keep dark. **GOOSEBERRIES**, plant, prune. **LAYERS**, plant. **LOAM** and **COMPOST**, obtain. **MEDLARS**, plant. **MULBERRIES**, plant. **MULCH**, put around newly-planted trees. **NAILS** and **SHEEDS**, draw and prepare in bad weather. **NECTARINES**, plant; prune and train in frosty weather. **NAILING**, proceed with in cold aspects. **PEACHES** (See *Nectarines*). **PEARS**, plant. **PLANTING**, in general, proceed with. **PLUMS**, plant; (Wall and Espalier), prune. **PRUNING**, attend to generally. **QUINCES**, plant. **ROOT-PRUNE** where necessary. **RASPBERRIES**, plant; prune. **SERVICES**, plant. **SNAILS**, destroy in their torpid state. **STAKE** and support trees newly planted. **STANDARDS**, remove dead and irregular branches from. **STATIONS**, make. **SUCKERS**, plant; remove from all fruits. **TRAINING**, proceed with. **TRENCH** and prepare borders, &c., for planting. **THIN** orchard trees. **VINES**, plant, prune, and train. **WEATHER** (bad), provide work for. **WALNUTS**, plant. **WALL-TREES**, generally, prune and regulate. **WALLS**: it is a very beneficial plan to paint these by means of a white-washer's brush, with a liquid mixture of 8 lbs. lime, 4 lbs. soot, and 6 lbs. sulphur. It destroys and banishes insects, as well as by its dark colour promoting warmth of the wall. The liquid employed, in which to mix the above, should be urine and soap-suds in equal proportions.

Any trees proposed to be regrafted in the spring may be *headed down* now, but the stumps of the branches should be left sufficiently long to permit a few inches more to be cut off at the time of grafting.

R. ERRINGTON.

KITCHEN GARDEN.

ARTICHOKES, dress. **ASPARAGUS-BEDS**, dress, b.; plant to force; attend that in forcing. **BEANS**, plant a good main crop the first week in the month, if not done the last week in November. **BEETS** (Red), dig up and store, b. **BROCCOLIS**, full-grown, may be taken up with good balls of earth, and planted in any nook or corner, or plot of ground of less value, in open weather. **BROCCOLIS**, treat the same, but lay in deeper, so as to earth-up the stems well; lay them in carefully, with their heads towards the north. Thus moving these vegetables gives an opportunity to prepare the quarters they occupied for other important crops; they are thus better enabled to stand the severe weather that may be expected, and, being closer together, they are much more convenient for protection. **CABBAGES**, plant; earth up. **CARDUONS**, earth up. **CARROTS**, store the main crops if not done, and attend to those growing in frames, &c. **CAULIFLOWERS**, attend to airing in all favourable weather those in frames or under hand-glasses; remove all decayed leaves, and look after slugs. **CELERY**, earth-up, and protect when necessary. **COLEWORTS**, plant. **COMPOSTS**, prepare and turn over. **CUCUMBERS**, attend to those bearing; sow seed towards the end of the month for plants to plant out in the middle of January. **DUNG**, prepare for hotbeds. **EARTHING-UP** attend to. **ENDIVE**, take up full-grown on a dry day, and plant deep and close together at the foot of walls, or other warm dry corners convenient for protection in severe weather. **HORSERADISH** may be dealt with in the same way as directed for the Jerusalem Artichoke. **HOTBEDS**, attend to. **JERUSALEM ARTICHOKES**, give a good top-covering of any rough mulching or garden-refuse, so as to keep out frost, and to enable them to be taken up when required; yet it is well to have a few of the roots stored for fear of snow, or other rough weather, at the very time they are wanted. **KIDNEY BEANS**, force, e. **LEAVES**, fallen, collect together. **LETTUCES**, attend to those advancing in frames on a gentle heat; see that no drip falls into the hearts of the plants, and give all the air the weather will permit to such as are planted in frames for winter protection only. **LIQUORICE**, dig up. **MINT**, force. **MUSHROOM-BEDS**, make; attend to those in production. **PARSNIPS**, dig up and store, b. **PEAS**, sow in the open ground of the best early kinds, protecting them from frost, mice, slugs, and birds. **PLANTS**, to produce seed, attend to, b. **POTATOES** may be planted in light soils in open weather, and in hotbeds towards the end of the month; examine often the in-door stores. **RADISHES** and **SMALL SALADING**, sow in frames, &c. **RHUBARB**, take up and pot off for forcing, or cover up with pots or tubs and fermenting materials. **SEA-KALE**, cover up with fermenting materials; fallen leaves are the best materials both for covering up the Sea-kale and Rhubarb. **SPINACH**, keep clear of weeds, and fallen and decayed leaves. **TANSY**, force. **TARRAGON**, force. **TRENCH**, drain, &c., vacant ground. **WREDDING**, attend to. Be on the alert of a frosty looking evening, and **COVER** up a little earlier. **TURNIPS**; any quantity, according to the demand, may be taken up and stored, or packed up tidy in a corner, to be buried in coal-ashes, so as to be come-at-able when required. We always make it a rule, at this season of the year, to store in little or *celery*, and *Endive*, *Brocoli*, or anything else that is likely to be required.

T. WEAVER.

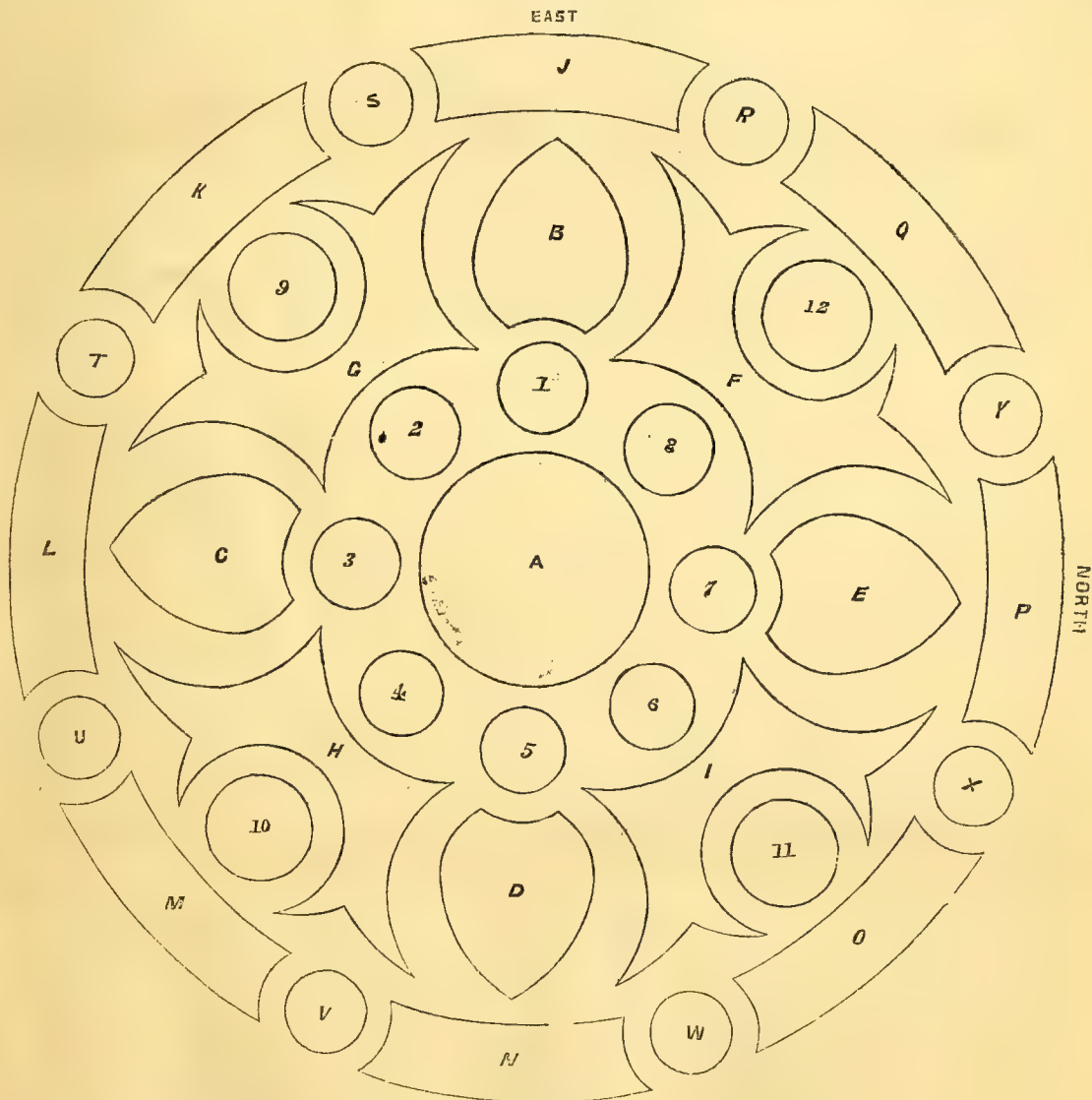
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WEEKLY CALENDAR.

M D	D W	DECEMBER 1—7, 1853.	WEATHER NEAR LONDON IN 1852.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo. Wind.	Rain in Inches.	Sun Rises.							
1	TH	December Moth; trees.	29.947—29.200	48—39	S.W.	05	47 a. 7	50 a. 3	4 a. 22	1	10	42	335
2	F	Winter Tortrix; heaths.	29.870—29.838	48—35	W.	—	48	52	5 16	2	10	19	336
3	S	Pin-tailed Duck comes.	30.028—29.992	51—38	S.W.	—	49	51	6 26	3	9	55	337
4	SUN	2 SUNDAY IN ADVENT.	29.904—29.884	55—52	S.W.	—	50	51	7 46	4	9	30	338
5	M		29.897—29.827	55—49	S.W.	25	52	50	9 9	5	9	6	339
6	TU	Black-throated Diver comes.	29.778—29.771	52—41	S.W.	—	53	50	10 30	6	8	40	340
7	W	Polyanthus flowers again.	29.691—29.435	50—44	S.	10	54	50	11 47	7	8	14	341

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 47.4° and 35.8° respectively. The greatest heat, 57°, occurred on the 7th in 1848; and the lowest cold, 14°, on the 6th in 1844. During the period 93 days were fine, and on 89 rain fell.

FLOWER-GARDEN PLAN.—No. 10.



A. was planted in circles, having *Salvia patens* in the centre, and Scarlet Geraniums, Yellow Calceolarias, Mont Blanc Verbena, Emma and Defiance, in distinct wings to the edge.
B. and C. Scarlet Geraniums.
E. and C. Yellow Calceolarias.
F. G. H. and I. Defiance at the wings.
J. and K. having Mount Blanc centres.

G. and I. having Emma centres.
1. 3. 5. 7. Sultan Calceolaria.
E. T. V. X. Blue Lobelia.
All the other round beds, varieties of Verbenas.
J. K. L. M. N. O. P. Q. are mixed beds of flowers.
The small beds on grass verge outside the

gravel-walk have a standard Rose in each, and have been sown with *Saponaria* and blue *Nemophila*.

The garden is laid out on grass, and formed out of an old pit, consequently is in a hollow, having its banks planted with *Rhododendrons*, *Azaleas*, *Hydrangeas*, and *Roses*, with *Hollyhocks* and *Dahlias* interspersed.

If this garden were on a level with a walk, or the way by which a stranger got to it, there would be a great objection to the tallness of the *Salvia patens* in the centre of the middle bed, A., as it is, the garden being in a hollow, and,

therefore, under the eye, when first seen, there is little or no objection to the different heights in the beds not corresponding together; you get a bird's eye view of the whole, and the colours alone take the attention. Still we must descend the steps to the circumferential-walk, opposite the centre of the bed n., and here the company divides; some go to the right, some to the left, and walk all round first; but if there are young ladies, and some half-pay or full-pay officers, unmarried, in the party, the ladies go to the left and enter the garden at v., the said officers turn to the right, and enter at w., and both parties meet again at the point of v., as by accident. No such thing; but let us proceed to say that this is a good arrangement, take it any way we like. There is as much judgment required to amuse and engage the attention of company round a garden as is needed to plant one. The moment a critic got to the bottom of the steps he would object to the centre *Salvias*, as both diminishing the real size of the whole garden, by drawing the eye to the very centre, and for hiding the small beds beyond. Suppose, now, the *Salvias* are removed, and their places filled with *Scarlet Geraniums*, these, again, with the circle of scarlets, would give such a flash, on a fine day, as would rivet your eye, and cause it to measure half distance sooner than the tallness of the *Salvias* would. I appeal to any lady who is an artist, and who is in the habit of taking views in perspective, if this view is not the correct one. Either too much bright colour, or very tall plants, therefore, are inadmissible in a flower-garden where there is more than one ring or set of beds all round the centre one, as in this. If this garden consisted only of the centre, a., and the eight small circles round it, a. might be planted with *Hollyhocks*, without the least prejudice to the rest; and here lies the very source of the nine errors out of ten in making and planting flower-beds. Somebody has been somewhere,

and saw a group that took the fancy at first sight, and walking round it, or looking back to it from a distance, only confirmed the first impression, and this body has the reputation of having "a good eye," which is quite true, but he is no gardener, and he might have as many eyes as Argus, before I would admit his beautiful group, which so pleased him, into a composition; in the group, it is just as he says; but make that group part of a composition, and it may spoil the whole. Borrowing ideas is sure to defeat the best artist, unless he is himself so much master of the particular art in hand as to know exactly if the new idea is applicable to his case, and where to introduce it into his composition. A *white Petunia*, instead of the *blue Salvia*, would improve this centre bed, and make it unobjectionable; the different rings would then be in contrast, and that amounts, in this instance, to a neutral; then, one-half of the circles being of the *Sultan Calceolaria*, as at present, the other half of these circle beds ought rather to be as gay as pink and purple *Verbenas* could make them; these beds being so much smaller than the centre one and those on the outside, I can see no objection to every other one of them being scarlet, but white alternately with scarlet would be better, and more telling, and I would prefer the dark *Sultans*, in place of the small *blue Lobelias* in the circles on the outside; then, if I could get the eight large outside beds in alternate scarlet and yellow, allround, then b. d. in good blue, as *Delphinium sinense*, or *Salvia patens*, trained low, and c. e. either with pink *Nosegay Geraniums*, or the old *Scarlet Variegated*, I would leave the rest to the choice of any one, or be as they are at present. In short, let the large centre bed be kept low, with a colour not too strong; the outside beds with tall plants of strong colours; and the four, b. c. d. e., in the next strongest colours. The rest can hardly be made wrong.

D. BEATON.

WE cannot understand the reasons upon which any farmer can object to make a return to Government of the amount of his Stock, live and dead, on a particular day specified. It is not an inquisitorial inquiry for the purpose of taxation; but an inquiry, the aggregate result of which would be of the greatest use to the farmer himself. It is well-known how much corn and hay, and how much live stock, are required for the supply of the kingdom; and the statistical returns asked for by the Government will give a tolerably truthful statement as to the produce ready to afford that supply. Could a farmer possibly have more valuable information whereby to regulate his market transactions? It is not accurate knowledge upon such subjects, but uncertainty, that are injurious to the farming interest. What is more sought for by the manufacturer, than accurate information of the stock on hand of the article upon which his capital is employed? By it he regulates his movements; and so far are we from wishing any obstacle to be thrown in the way of agricultural statistics, we wish that means were taken to have the returns more full and more particular. We would have the returns include Poultry, Market Gardens, Allotments, and Orchards. We would have them thus copious, because we know that in all that concerns manufactures—and farming and gardening are no more than manufactures of vegetable and animal consumables—the more information the manufacturer possesses the less liable he is to fluctuating prices and needless loss. We never knew an instance of a man mistaking his way from having too much light.

THOUGH we differ as to some of the regulations of the *Birmingham Exhibition*, yet we rejoice to find that it is greatly prosperous. The entries of all kinds, excepting in Sheep, are largely increased beyond those of last year. In *Poultry*, the increase is very large; and it has this earnest of permanency—it has been steadily progressive. In 1851, there were 1,055 pens; in 1852, 1,223; and, in the present year, more than 2,000. It will, probably, be the most surpassing Exhibition of Domestic Poultry ever witnessed. We know that the attendance will be numerous, and that parties are already securing lodgings. If an addition had not been made to Bingley Hall, there would have been much difficulty in providing pen-room for the fowls.

It has been said, that we are equally ignorant of the origin, the precise seat, and the cure of Cholera: treat it as we may, the disease, once established, carries off the half of all attacked. Some Jenner has yet to rise up, the oracles say, to give us a specific remedy. But this confessed inability to cope with the disease has induced inquiries as to its prevention which have led to many valuable observations and suggestions; and we cease to wonder at the scanty information respecting the best methods of cure in former epidemics, of the symptoms, antecedents, and probable local and atmospheric relations, of which so many particulars have come down to us. These accounts all confirm the idea the danger has ever arisen out of some contamination of the air of crowded places (*morbo celi*); and that the sick, and even the predisposed, should be separated from the

healthy: the only safety consisting in preventive measures, and early attention to the slightest ailments.

*Principus obsta sero medicina parata est
Morbi per nimias quando crevere moras.*

Vaccination and the small-pox have proved, exceptionally, the thing sought to be established,—that prevention is better than cure: poor town's children being saved by vaccination, only to be thinned-out by other infantine epidemics; and among those who struggle on to a more advanced age, consumption, or typhus, steps in in due course to claim its own.

More than twelve millions of our people live in the country, where there is often not more than one man to every five acres. Eight millions exist in towns, where there are too often a hundred persons to every acre. *One-third* of all children born in the country, and *one-half* of all born in towns, die under twenty-one years of age. *One-half* of the children of the very poor, in most towns, die under five years of age; and under one year of age in a few towns. The children of the more wealthy, who reside in spacious houses, in wide streets or squares, with lofty rooms, and every attention to nursing, medical treatment, food and drink, warmth and cleanliness, escape with about the same mortality as country farmers' and labourers' families.

Some of our large towns' mortality may be prevented; certain means being, to some extent, available against the consequences of our infringement of the natural laws of life. This is inferred from observations like the following:—The great fire, after the plague in London, destroyed many bad, dirty, old, "leprous" houses. The fire at Hamburg, between the first and second attacks of cholera, took effect in the same way: and in both instances, the laying-out of better streets, and loftier houses, resulted in a great improvement of the health of the inhabitants. The Metropolitan Lodging Houses were built to try what could be done for the health of the poor, by properly-constructed dwellings, with all appliances for cleanliness and ventilation; and so far, the health of the inmates has actually reached the country average.

There is as much difference between living a simple country life, and leading a more artificial existence in town, as there is between the healthy requirements of a wild plant, and a garden or hothouse flower; or between a wholly domesticated animal and one allowed the freedom of the open fields. Slight curable natural disorders, likewise, when transplanted into those localities termed the hotbeds and forcing-grounds of epidemics, assume new and monstrous forms, capable of being perpetuated under due cultivation—permanent varieties, in fact, differing from their former selves as much as prize Pansies, Geraniums, or Magnum Bonums, differ from their wild congeners.

More than a hundred persons cannot dwell together on each acre of ground without risk, especially when hardly raised above the level of a dirty river, or arm of the sea. Thirty or forty yards of elevation alone confers comparative immunity from cholera, even in

London.* In a large city, over-crowding begins when the houses are higher than the street is wide. In low, bad situations, the streets, or courts, should be twice as wide as the houses are high. The ground-floor should be only used for lumber and warehouse-rooms, or stores; the next floor for shops, places of business, or domestic offices; only the highest parts of the house being occupied as dwellings. The inhabitants of such places should be, as much as possible, only persons in the prime of life, and in the very thick of the animating occupations there going on, with the means to procure, and the spirit to enjoy, occasional recreation; and children born in such places should get a country bringing-up.

Certain exceptional rules require to be remembered for the drainage of populous low districts. Sewerage cannot be thrown in any quantity into the next river, nor spread by irrigation over the marsh lands adjacent: all attempts at inodourising and precipitating the essential manures on a large scale have failed. In the present state of our knowledge, or ignorance, all that we can do, is to limit the pipe-sewerage to liquid refuse only, removing, by vigorous scavenging operations—week by week, or even day by day, all solid or half-solid offensive matters by means of closed boxes, covered carts, and such-like contrivances. Where the basement stores are not used for dwellings, a saving of fall may be effected by not sinking the tubular drainage more than a few feet in the ground; thus, altogether, flushing operations may be facilitated, and the sewage carried to a great distance, where it will be more manageable in the end. The diameter of the tubular sewers may be diminished, if we allow the mere surface-waters of the housetops, and well-scavenged streets, to be conducted directly into the nearest river. But the main sewers, from higher adjoining districts, should be diverted at a higher level, and so carried clear off to some distant point.

The work of purifying the animal system is wisely accomplished by a three-fold division of the task: by defecation, diuresis, and by diaphoresis. Practical agriculturists adopt a like three-fold division of the work of keeping their farm-yards clean and healthy: having one process for collecting solid manure, with all the sweepings of their premises; another process for simply impounding by itself all valuable liquid-manure, and nothing else; and a third, separate arrangement for disposing of the rain-water from roofs of buildings and mere surface-drainage. The puzzle of dealing with solid-manure, liquid-manure, surface-drainage, and the enormous body of water required for flushing, all at a low level, is a difficulty of our own making.

There is a saying, that muck should go up the hill, and stock should move down hill. Farmers know that the richest alluvial soils are not the best for rearing young

* "London is situated in a basin, through which the Thames flows; and it was discovered, during the epidemic of 1848—1849, that the rate of mortality from that disease was nearly in the inverse proportion of the elevation of the ground. The same relation has hitherto been observed in the present epidemic. The danger of dying of cholera, and of all plagues, diminishes within certain limits, in proportion as the dwellings of the population are raised above the level of the sea." [*Recent Report of the Registrar General.*]

cattle—being rather adapted for feeding mature animals which fatten and prosper amazingly there. So the kitchen-gardener makes his seed-bed of the poorer and less promising soil; removing his choice plants in due season to some highly cultivated plot, there to make the most of themselves.

It may not be out of place to note here, how few of our distinguished citizens, bishops, judges, and scholars, have been town-bred and born. We even prefer our domestics, clerks, and confidential servants, from the country. The great world has always acted on the maxim, that it is cheaper to buy than to breed. Annual devastations from epidemics, would, in a century or two, reduce our great cities to nothing, were it not for large annual infusions of pure country blood. And it has not been numbers only, but cool heads and steady hands; talent, work, and all the elements of true greatness, all have "come down" from the country. J. J.

HOW SHALL WE RENOVATE OLD GARDENS?

It is pretty-well known to the majority of our readers, that many of the vegetables we cultivate will not succeed so well in our old and long-cultivated kitchen-gardens as in fresh-enclosed grounds. It matters not, on some soils, how much manure is applied, such things as Carrots, Lettuces, the Cabbageworts, &c., plainly show that they are not at home. I do not say this of all gardens, but the majority I have found, by experience, are of this character. Here, for instance, the kitchen-garden has been in work for about a century, constantly tilled, and the difficulty of procuring some things is very considerable, and were it not for what the world calls a deal of pains-taking, which, assuredly, involves a large amount of labour, we should occasionally have to encounter long visages. As it is, I am not aware that we have anything to blush at in vegetable culture, and this emboldens me to indulge in a little—at least, harmless—discussion, in order to enlighten the minds of those who are taking first steps in gardening. It has been truly observed, that there is no royal road to geometry; and if a prince take to fiddling, he is, I am grieved to say, obliged to run through the gamut by the same road as the veriest clown. And so it is in many gardening processes; pains, *extra pains*, efforts, call them as you please, must occasionally be resorted to; and what to those luckily circumstanced at times appears a vast deal of trouble, on a closer and more judicious inspection would appear a manifest duty.

Amelioration—the term I select to express what I would explain—of course, means bettering, and the first notion (with a complete clod-hopper) connected with this term would be manuring. An old farmer of this class, long esteemed as a country wit, was once asked in this district, by a gentleman of much consideration, what was the best time of year to apply muck?—the phrase here for all animal manures. "All the year round," was the answer; and this has passed on, for some thirty years, as a piece of transcendental wit: not a wake occurs, but poor old P's wit comes forth fresh as ever. Poor old P. is now gathered to his fathers, and thus spared the double penalty of observing that this muck question has become a question of figures, and, moreover, that there are certain conditions in land that require something even beyond muck.

Without for a moment attempting to enter the laboratory of the chemist, a proceeding I respectfully transfer

to higher hands, I may observe, that these "worn-out soils" (the ordinary phrase,) have parted with some principle essential to a high pitch of culture. That they have, in many instances, acquired something equally undesirable to certain crops, is, too, I think, equally manifest: I speak merely from a common sense view of the matter. However, as I can say little about chemical agencies, I may, at least, be permitted to state a few facts, with, perhaps, some mere opinions.

Draining, where stagnation exists, I merely point to in passing, as the only true basis on which to commence a thorough amelioration; this operation refers, perhaps, more to texture than quality in its permanent effects. Without this, indeed, land generally requires double the amount of labour, whilst it will only yield half the amount of success. We must not talk of permanent amelioration whilst the soil is so soured as to be all but impervious to the marvellous influences of the atmosphere. But my chief purpose now, is to point to deep digging, or trenching, and the application of materials of a very economic kind, and which are but too apt to be treated lightly through their very inexpensiveness.

I have before alluded to the great importance of deep digging or trenching, in *THE COTTAGE GARDENER*, and I must again point to its continued beneficial effects, as exemplified in the crops here. Until the last five or six years trenching had but seldom been resorted to, and I began to find that several kinds of vegetables depreciated both in size and quality; and the club in the Cabbage-worts, generally, had become so serious as to threaten a total failure, unless some remedial measures could be devised. Concluding that it was very probable that certain inorganic materials might be contained in the subsoil, which would be of service to the surface-soil, besides the benefits arising from a deeper root in dry weather, I at once went on the principle of adopting a periodical trenching, of about once in three years; making a point of bringing about four inches of the subsoil—a sort of dirty, half-sandy, half-clayey substance—to the surface at every operation. This has done wonders, and it is a practice that will be continued by me just as long as I can obtain labour to carry it out.

I may be pardoned, perhaps, for repeating what I once before related in these pages, that I originally took the hint from an odd circumstance. About seven years since, being determined to grow neat little Silver-skin Onions, for pickling, and for which the general garden-soil had proved too rich, I caused a plot to be very deeply trenched, as an experiment, bringing up six or eight inches of the subsoil, on which, too, I sowed some Red Beet, as there had been complaints about the grossness of the Beet on the ordinary soil. It turned out, however, that both Beet and Onions were the largest in the garden, although growing principally in this queer-looking subsoil. I have little doubt that the slight tendency of this subsoil to a clayey character is of much benefit in this case, the surface-soil being rather sandy. But this cannot be all; there must be something in the character of this material which replaces some quality of which the soil had been robbed, and, perhaps, some peculiar chemical agency induced. I must here confess, that such bold processes may not apply to all descriptions of subsoil equally: for instance, who would think of bringing up a mere sand, or a gravel, unless the surface be too adhesive?

I have seen so much of the evils of shallow ploughing, during the last twenty-five years, by farmers close to my elbow, that I would almost adopt any other plan than this dish-skimming system. There are scores of acres, almost touching my house, of as nice, mellow, upland soils, as ever crow flew over, (to use a Cheshire idiom); soils which have been skimmed and turned about five or six inches deep, for more than a century; and, of course,

next to this adopted line—this favourite depth—a regular pan, almost as impenetrable as a layer of sheet-iron, exists, bidding utter defiance to depth of rooting. The despicable results of this practice may be plainly seen in the blueness of the foliage of such things as Swedes, and the general flagging, or drooping, of all crops, except corn, after the occurrence of only three or four days of a hot July sun. Unfortunate crops! they would, *if permitted*, throw down deep radicles, which would soon prevent this flagging—this standing still, or worse—when they should be progressing the most.

Enough of this. I will now point to some appliances previously hinted at. I before spoke of the possibility of bringing even sand up, with advantage, on some stubborn soils, but how seldom do we see that or any other attempt at improving texture by such means. I much fear that fashion rules here, as in most other things; science is powerful, but it is to be feared that she would but “drag her slow length along” without the aid of fashion. Every body will admit that science projected, completed, and furnished the Crystal Palace, but where would science have been without the overwhelming influence of fashion? And it is partly so with many gardening procedures; be the suggester ever so right in his views, the thing is thrown aside as butter paper, until somebody, high in position, who acts as a sort of fagman in society, takes it up, carries it out regardless of expense, and sets all the world staring at him. The practice of clay-burning has never, I believe, been fairly condemned on principle; but whatever may be the case agriculturally, there are garden cases where it would, doubtless, be beneficial. But then there are such things as lime rubbish, and the finer debris of old buildings, lime itself, and anything charred, which was once of organic character.

These are the economic materials I alluded to, and every body can get them; but I would direct special attention to the use of lime in old and deadened soils, especially those which have, as gardeners sometimes say, been “mucked, and dug, and cropped, until they are sick of it.” Such soils, of necessity, contain a superabundance of manures, or the dark residue of organic matter, applied constantly in the act of cropping for gross vegetables, in the shape of the various manures, leaf soil, &c.

But it is impossible to overrate the importance of charring every stick and weed, by system, that hands can be laid on. I say by system, for I would not have it understood that I wish people to be always charring. No; we must have simpler and less expensive plans. Twice a year I find sufficient, viz., March and October. The former month will be furnished with all the prunings, dubbings, and general charring of the past winter, or rest season; and the latter will consume vegetable remains, weeds, with their seeds, &c.

Here, then, is a double action; seeds, aye, and insects, destroyed in myriads; a famous compost provided, and a system of cleanly culture promoted.

Deep trenching, at set periods, and for particular crops, and the application of corrective materials, will be found, on trial, to make old kitchen gardens look young again.

R. ERRINGTON.

BULBS.

(Concluded from page 99.)

SPREKELIA.

THIS genus is inadvertently said to be of stove bulbs in our Dictionary, but all of them that we know of yet are as hardy and as easy to flower as the *Vallota purpurea*. The old *Amaryllis formosissima*, that used to

flower twice a-year with us, in the pine-stove at Altyre, thirty years ago, is just as hardy as Red Onions. The Bolivian *Cybisters* require only the frost to be kept from them; and *Glauca*, from Mexico, is only another form or variety of the *Jacobæa Lily*, from Guatemala, and is quite as hardy. There is another one, called *Cinnabarina*, which flowered at Spofforth with Dr. Herbert, but I never saw it, nor even know where it came from, or if it was published. That the new kinds, which were introduced twelve or fifteen years back, were treated as stove bulbs, I can readily believe, for I have seen hardy bulbs that ought to have been out in the borders kept in a hot stove, this very season, by a first-rate gardener; and I know, from long experience, that nine-tenths of all the gardeners ruin their bulbs by too much heat.

Sprekelia formosissima, or the old *Jacobæa Lily*, is the only bulb that I can call to mind that will grow as well in the stove, year after year, as it will do out-of-doors. The constitution of this bulb is unsearchable.

SPREKELIA CYBISTER.

Here is a living example of how bulbs are often—too often, indeed—mistreated. This bulb was introduced from Bolivia, which you may call the Balmoral of Peru, only that it is in the south-west of the highlands, instead of being, as our Balmoral is, in the south-east; and, as a matter of course, it must have strong heat in London, and then it would not flower, and likely enough it would soon have been lost, but an American gentleman (begging his pardon) who was over here, took a fancy to it, and bought several of the batch, thinking, no doubt, he could flower it before the Londoners; whether he did, or not, I know not, but the year after he sent back one of the bulbs to Dr. Herbert, who understood what it was the moment he saw it, and he found no difficulty whatever in flowering it. *Cybister* is the oddest-looking flower among the *Amaryllids*; the flower hangs down in front, like that of *formosissima*; the lower part of it, or lip, keeps the drooping posture, while the rest of the sepals or petals wave a good deal, and spread outwards and upwards, as if endeavouring to regain the upright position which it held when in bud. At first, the flower-bud stands erect, but when opening, it “tumbles down” to the drooping posture,—from this peculiarity the plant has been named “the tumbler,” which is the meaning of *cybister*. The *Tumbler* produces four flowers on a scape; the colour is of three shades—blood-red at bottom, and lighter red, with a greenish tinge above. It is a native of Bolivia, and was introduced in 1838 or 1839.

SPREKELIA CYBISTER var. BREVIS.

About the same time (1840) that Dr. Herbert flowered the *Tumbler*, Mr. Knight, of the King's Road, flowered another bulb from the batch of Bolivian bulbs, which, on being compared to the *Tumbler*, was found to be only a variety of it with shorter flowers. To show how nearly these *Tumblers* bring *Sprekelia* to *Hippeaster*, and to raise the question, Will the two unite by crossing? I may state, that Dr. Lindley, before he was aware of the existence of the real *Tumbler*, had named this short-flowered variety of it from Mr. Knight, *Hippeastrum anomalum*; I believe, however, that he has given up that name in favour of the lesser *Tumbler*; and I further believe, that if *Tumblers* will breed with *Hippeasters*, that the old *H. aulicum* would be as good as any to try the experiment on; and also, that if a cross is obtained, the seedlings will be more hardy than seedlings of *Aulicum* and *Vittatum*, or, at least, fully as hardy.

There is a mystery about the old *Jacobæa Lily*, or *Sprekelia formosissima*, which we shall never fathom, but it tends to increase the chances of uniting the breed with *Hippeasters*. We know that the old *formosissima*

was cultivated, for many years, with great success in the front of pine-stoves, when, by forcing it early in February, after a winter's rest, it flowered twice the same season,—in the spring and in the autumn. It was the same with the Coral-tree (*Erythrina cristagalli*). When I was a boy, these two were always in the stove, rest or no rest; and the gardener who failed to flower them twice a-year was not considered worth his porridge. If *Amaryllis vittata* of those days, now a *Hippeaster*, and all the other greenhouse kinds that have sprung from it, and other half-hardy ones, are potted in strong yellow loam only, they will bear stove heat for years and years without any injury. I know of no other bulbs about which so much can be said, and the fact is a presumptive evidence, to my mind, that the *Tumblers* must, some day or other, lapse into *Hippeasters*. For their cultivation, see under *formosissima*.

SPREKELIA GLAUCA.

This is a much handsomer flower than either of the *Tumblers*, and if seedlings were to be had in the genus, this *glauca* might well be supposed to be only a cross from *Sprekelia formosissima* by some lighter species. The flower of *glauca* is smaller and paler, and there is a pale streak along the middle of each division of the flower. The leaves are narrow and very glaucous (milky-green). It was discovered, in Mexico, by Mr. Hartweg, who sent it to the Horticultural Society, with whom it flowered in May, 1840. The other kind, *cinnabarina*, of which I know nothing more than that it flowered with Dr. Herbert, was introduced, and flowered about the same time; so that all the new *Sprekelias* "tumbled-in" much about the same time, and that after we had all but forgotten when or whence the old one came.

SPREKELIA FORMOSISSIMA.

For three-quarters of a century this was one of the commonest bulbs in the country, and no one knew exactly where it came from; but from the nature of the plant being able to sustain the heat of the stove, it held its place, while hundreds of other bulbs were introduced, lost, and forgotten, because they could not bear such heat. Mr. Skinner at last found it in Guatemala, whence he sent it home; and much about the same time, I unpacked half-a-bushel of the bulbs, from the gatherings of M. Galeotti, in Mexico, under the patronage of Mr. Parkinson, then our Consul in Mexico, so that I was not surprised to hear of the locality of *glauca*. From this batch, I had a bed in the open air, and without any protection whatever; and the bulbs withstood the severest frost experienced in this country since 1814. Hence my belief that this old stove bulb, as it was once considered to be, is as hardy as a Dutch Crocus; but yet it will not flower without ripening off the bulbs in warmer earth than our south borders. It is a perfect evergreen, if you choose to keep it watered in the greenhouse during the winter, but, then, it will not flower. At Melbourne, this and *Valotta purpurea* would make evergreen beds, and, probably, flower as freely as Tulips.

It is said that few have ever heard of the natural death of a donkey, and I believe the same might be said about the Jacobæa Lily. It will grow in any good garden soil, and in all kinds of composts. In very rich or highly-manured ground, as for onions, young bulbs of it will double their size in one season, and they never go to rest till ten degrees of frost kills the leaves. But in a damp situation they will go with much less frost, or if a smart frost comes close upon showery weather it is the same.

Every cross-breeder in Europe has tried his hand on it scores of times with no satisfactory result; neither by its own pollen, which is good, nor by that of kindred bulbs, has it produced a single seed. A Mr. Johnson,

in 1810, gave out that his seedling *Amaryllis Johnsonii* was between it and *vittata*, but that mistake has been since rectified, by direct experiment on *vittata* and *regina*, which produced the same cross. Mr. Turner, the curator of the Botanic Gardens, at Bury St. Edmunds, once wrote to Mr. Loudon about a batch of seedlings from *formosissima*, but I could never learn more of them when I was in Suffolk.

The best way to treat this and the other species, is to flower them in pots, and as soon as the flowers are over in May, to turn out the balls under a south wall, or the front of a greenhouse, or stove, in rich deep soil, not too stiff; to give them water in dry weather, and to let the frost kill the leaves in the autumn; or, if there is no frost to the end of November, they ought to be taken up, then keeping the leaves on, and spreading out bulbs and leaves to dry gently in any dry, warm place; a late vinery is the best place; but after a week or ten days, you might string them up like onions, and keep them all the winter in the kitchen. They certainly like warmth all the time they are dry. In March, some of them might be potted, and be put into a cucumber-bed to start; the flower-scape comes shortly after the leaf, and before it is quite open remove the pot to in-doors, as you would a Hyacinth. In April, put a succession of them to work the same way, and in May the same; or, if you like it better, keep them dry to the end of April, and then plant them out, merely covering the bulbs, and they will all flower before Midsummer; only one flower to a scape; but a strong bulb puts out two scapes; and a two-flowered scape has been seen now and then, but it is a very rare thing.

I would strongly recommend these bulbs to every one who has a garden, as they give no more trouble than common border Tulips, and there is a great chance of novelties by crossing the Peruvian Tumblers with the richer Mexican species.

STRUMARIA.

The bulbs included in this genus are, to botanists, the most easy to distinguish of any, from the swelling or strumous formation of the bottom of the style in all of them. This swelling of the lower part of the style, and the regularity of the perianth or flower, are the two private marks which divide them from *Nerine*. They never got into favour in cultivation, and very few gardeners know anything more about them than the mere names. *Angustifolia* has regular flowers, white, and lined or streaked with red. *Truncata* differs from it only in the leaf to a gardener's eye. *Linguefolia* is broader in the leaf, which is half-an-inch wide, than either of the preceding, and the white flower is lined with green. *Undulata*, at first sight, looks more like a *Nerine*, the flower being undulated; but the white colour and swelled style tell it to be a *Strumaria*.

Part of the stamens adhere (adnate) to the smaller part of the style in all of them, except this one, in which the stamens are free; this, with the waved flower, brings *undulata* very near to *Nerine*, and, perhaps, it would cross with that genus; and if so, its pure white blossoms, faintly tipped with red, would open a wide field for improvement in *Nerine*, and render shades and blushes in that section that would vie with *Bella Donna* itself.

S. rubella, with a red flower, comes next nearest to *Nerine*, and the rest of the names under *Strumaria*, in our Dictionary, belong rather to *Hesaea* and *Imhojia*.

All the *Strumarias* rest with us in summer, and grow from October to May or June; and require exactly the same kind of treatment as *Nerines*.

THYSANOTUS, TRITOMA, and VELTHEIMIA, are on my list of half-hardy bulbs; but they are not bulbs, although the leaves and flowers look as if they ought to come from bulbs. *Anthericum*, *Paterosias*, and many others, have the same looks; and a man might be worse

employed than in gathering together all such plants—I mean on paper—for some of them are extremely pretty, and ought to be better known as half-hardy herbaceous plants.

TRITELEJA,

Or rather, *Tritelia*, as it is sometimes spelled, is a genus of small, hardy, or all-but hardy, bulbs, very closely in affinity with *Brodiaea*, and not unlike it in looks and habit. The old *Grandiflora*, sent home, I believe, by Douglas, from North-West America, has been lost, like his *Calochorts*, long ago. *Lava* is one of the prettiest and most profuse flowerers of hardy Lily-worts; but is rather difficult to keep over the winter. I think this is also one of Douglas's bulbs, and I fear it has gone after *Grandiflora*, for I have not seen it since 1835, when I lost it in Herefordshire. Its leaves are long and narrow, the flower scape requires support, the umbel being too heavy for it, like that of *Milva biflora*, which came out at the same time. The flowers are of a rich blue colour, and from twelve to twenty of them come in one umbel. I had it in almost all peat, and that, I think, was the death of it, and of the *Calochorti* as well; and I seriously warn all bulb growers to avoid peat as much as possible, till they are quite sure of a new bulb. *Uniflora* is something like a *Crocus* in habit, bearing one flower only on a scape; the colour is a lacy-blue. Mr. Low, of the Clapton Nursery, introduced it from some one at Buenos Ayres; but it is a native of Mendoza, where Dr. Gillies found it long since. The yellow one, said to be from Monte Video, I never saw, and know nothing about it.

URCEOLINA PENDULA.

This is a very rare bulb, from South America, high up in Peru, and I am not aware that it ever flowered in England. Those who put it in the stove soon lost it. It is so much like *Griffinia hyacinthina* in leaf, that any gardener would be excused for treating it to a stove climate, if he did not know that it was a half-hardy plant. It is the *Crimum urceolatum* of Ruiz; and there is another, called *fulvea*, from a place in Peru called Paracatuana. This has not flowered here either, that I know of; but, from the dried specimens sent over by Matthews, it must be a very nice plant, with five flowers in the umbel—and they not unlike some *Bomarea*—with a noble-looking *Griffinia*-like leaf, having the foot-stalk full four inches long, with a broad blade, something in the way of the bottom leaves of the new *Lilium giganteum*.

WACHENDORFIA, WATSONIA, and WURMBEEA, have been treated of among "Cape Bulbs," therefore

ZEPHYRANTHES,

is the only remaining section on my list; and the first species in the order of the alphabet is

ZEPHYRANTHES ATAMASCO.

This is the old *Amaryllis Atamasco* of Linnæus, and the Atamasco Lily of our old books. At the time (1737) Linnæus published his *Amaryllis* (Hort. Clifort. p. 135) all the species which he knew of them, and which were then in the Clifort Garden, have since turned out to belong to as many genera, or sections of the great family, as *Sprekelia*, *Zephyranthes*, *Nerine*, and *Oporanthus*. Although he gave the name "because *Amaryllis* was the *Bella Donna* of Virgil," he had not seen the *Bella Donna* Lily of Italy, and, therefore, could not describe the type-plant on which he founded the genus. The *Atamasco* is the best known species of *Zephyranthes* to British gardeners; and those who know them not, have only to think of a large white *Crocus*, to be of a bright red colour in the bud, and pure white after opening, and they at once have the Atamasco Lily in

idea. It grows in any good garden soil; but if it is to be left out in winter, it ought to be planted in white sand, and four or five inches deep. Although it grows in open pastures of Virginia and Carolina, it is apt to rot in damp, or very strong, soil with us in winter.

ZEPHYRANTHES CANDIDA.

This is also a well-known and a perfectly hardy bulb, with white flowers and rush-like leaves. A bunch of white *Crocus* flowers set among a lot of small *Jonquil* leaves gives a good idea of it. It is a native of Buenos Ayres, but is much hardier than *Atamasco*; and where it does well, it is one of the best hardy border bulbs we have, flowering all the summer, until stopped by the frost, and the leaves hold green all winter. In the chalky soil, at Shrubland Park, it increased prodigiously, but never flowered worth a button. I have had it, however, with dozens of flowers open on a tuft for months together. In Buenos Ayres it grows in such abundance along the banks of the great La Plata river, that the shore is silvered with it for miles, as the Cotton Grass of Scotland, on a smaller scale, appears on the margins of bogs and swampy ground.

ZEPHYRANTHES CARINATA.

This is my own favourite of all the genus. The flower is of great substance, large for such a small plant, and of a bright, shining, rose colour, expanding widely under a bright sun. The narrow leaves are purple at the bottom, and look exactly like those of a small, young offset of *Valotta purpurea minor*. It delights in light sandy loam, and flowers in May and June, producing only one flower on a scape, like all the species of this genus. They all grow and flower in the summer, and go to rest in winter, except *candida*.

ZEPHYRANTHES CHLOROLEUCA.

This is a two-flowered species of *Habranthus*, now called *Chilensis*, with stout, greenish-white flowers, about which nothing has ever been known in cultivation.

ZEPHYRANTHES DRUMMONDI.

This is the same as *Cooperia pedunculata*, supposed by Donn to be a *Zephyranth*.

ZEPHYRANTHES MESOCHLOA.

This is another white flowering species, from Buenos Ayres, with a greenish-white bottom to the flower, a little stained with red on the outside. It is all but hardy, and seeds freely on a south border.

ZEPHYRANTHES ROSEA.

Another very pretty little bulb, from the high mountains in Cuba, and likes a warm situation, or to be kept in a pot in the greenhouse. It is much in the way of *Carinata*, but with a smaller flower.

ZEPHYRANTHES STRIATA.

This, and another one much like it, called *Ackermani*, is a variety of *Verecunda*. The three are from Mexico, or Guatemala. They have white flowers, tinged with red before they expand, which they do quite flat on a hot day. They are very free flowering bulbs, and last a long time in bloom; and each flower is succeeded by a seed pod, and the seedlings flower early, with very little attention.

ZEPHYRANTHES TUBISPATHA.

This is rather a stove bulb, from the Blue Mountains, in Jamaica, with white flowers that are greenish below.

ZEPHYRANTHES VERECUNDA.

This is incidentally mentioned above under *Striata*; a desirable pretty border bulb.

OTHER ZEPHYRANTHS.

There are several more species of this genus known to, and described by, botanists and travellers, but they are either not in cultivation, or little known if they are. The whole race delight in light, rich, sandy loam; and if they are grown in pots, large upright 32's are the best for them; and from three to seven bulbs might be put in each pot, and no peat or leaf-mould should be used in the compost. In the East Indies, and in Australia, all of them would answer for Crocuses. *Candida*, *carinata*, *rosea*, and the varieties of *verecunda*, are the best as a selection of them.

D. BEATON.

VAGARIA.

This (omitted in its proper place) is the only genus in the whole series with which I found myself at fault; and in returning thanks to two or three individuals who assisted me out of a fix, here and there, with some obscure species, I must add, that I could not find a gardener, or amateur, who could define *Vagaria*, or even conjecture which is *Vagaria* proper. What I always took for *Vagaria* is the Spanish bulb called *Lapiendra*, with the white band in the leaf, and I made some enquiries about it in THE COTTAGE GARDENER some time since. I once thought I had it by the ear through a gentleman well known as *Dodman*; but, no; not yet. I knew that Dr. Herbert cancelled his *Vagaria* long since, on receiving what he took to be its type, *Pancretium parviflorum*, from the Garden of Plants in Paris. I knew, also, that Dr. Lindley re-opened the genus *Vagaria* on receiving the true *Pancretium parviflorum*, of Redoute's *Liliaceae*. Here was a fix; and to one who knows the botheration caused by "Answers to Correspondents," to those whose time is of the utmost value, it was hard to trouble the author of the second *Vagaria*; but a less authority could not unfix me; and now I have to thank Dr. Lindley for putting me on the right scent. "I regard it as perfectly certain," he replies, "that my *Vagaria* and Redoute's *Pancretium parviflorum* (as to the flowers) are identical: but his leaves are evidently represented from some other plant, as so often happens when flowers and leaves are not co-extaneous," or produced together. "*Lapiendra* is, no doubt, a very different thing."

VAGARIA PARVIFLORA

Is now ascertained, beyond a doubt, to be a native of South America, having been recently introduced from Bogota by C. B. Warner, Esq. The leaves are broad above, and narrow, or petiolated, at bottom, like those of *Griffinia*; but the nearest affinity is to *Euryeles*. "Certainly it is no *Pancretium*." "The flowers are small, firm, white, with a greenish tube," and five of them form the umbel. It is a greenhouse bulb, and does best in sandy loam and a little rotten dung.

D. B.

SEASONABLE LITTLE MATTERS.

SINCE writing last week, what changes we have had! a sharpish frost at one time, an April day at another. The beauty of the flower-garden is now over for this season, though, six days ago, on the 16th instant, *Dahlias*, *Ageratums*, *Penstemons*, *Calceolarias*, *Cupheas*, *Fuchsias*, &c., were very beautiful. A few days previously, and even the *Heliotrope* was more sweet and beautiful than in June. The flowers of all, except, perhaps, the *Penstemons*, are now injured, although the foliage of many, as *Scarlet Geraniums*, shrubby *Calceolarias*, &c., are little the worse for the changes of weather they have passed through. Had it not been for the wet dull weather preceding filling the young shoots with watery fluid, the frost would have exercised less injury

than it has. Like our correspondents, who are now eagerly inquiring what they are to do with their plants, we should feel, that if such matters had not received previous attention, we should be alluding to them now even past the eleventh hour. And yet, for the sake of beginners, who are really Cottage Gardeners, I am tempted to advert to a few little matters that are all-important to them.

SCARLET GERANIUMS.

This red blazer is still an universal favourite. For the florists' *Pelargoniums* for windows, a fair friend told me, she had found such benefit from the details of Aunt Harriet's system, that she troubled herself but little about other articles. It always gives me a spice of pleasure to find that some one else has been more successful in popularising the minutiae of plant culture than I have been able to be. I have found that the description, by the same writer, of "Harry More's" system of managing *Scarlet Geraniums* in pots or boxes—keeping the plants in the same boxes for years, and removing them to any dry place secure from frost before they were injured—is the best for securing abundant bloom in windows and balconies. If the soil is pretty moist at storing-away time, and if then the pots or boxes are covered with moss or dry hay, and a little of the latter is left ready to throw over the tops in a very frosty time, little more will be required until March, when any shrivelled shoots may be removed, the plants be placed nearer light, and have their stems syringed or sponged with milk-warm water. In April, a little surface-soil may be scraped off, the soil moved with a pointed stick to allow air to enter, then watered, pruned a little where necessary, and surfaced with fresh, rather rich soil, and the same plants will bloom better and better every year. I have found no plan more certain and economical than this.

But some of our friends, who ask questions how they are to manage these plants, in damp cellars and dry cellars, in close garrets and dry garrets, say, and with truth, that this is no direct answer to them, when their plants are not now in boxes, but have been growing in the open ground. Well, even here, those possessing no glass will find it best to imitate, as far as possible, the Harry More system. I have hung plants up in damp cellars, and they moulded and rotted. I have hung them up in dry cellars and garrets, and they became mummy-dried. I have packed the roots in damp moss, and left the tops exposed, unless in severe frost, and had few failures. I have taken them up in barrowfuls to the rubbish heap—there cut off all the soft part of the green shoots, and every leaf; shortened the long roots to some six inches in length; dipped the tops, and especially the cut parts, in a pot of quick-lime; and then packed the roots, as close as the stems would squeeze together, in wooden boxes, and in soil slightly moist, the latter being placed rather firm; and then taken these boxes to any out-of-the-way place, rather dry, and where there could be a little light admitted on fine days, and covering thrown over all when the weather was severe. In such boxes we used to have some failures, but, on the whole, the system answered well. Those who had convenience might pot them separately, in April, and coax them forward in their windows; and those who had not that convenience would have to thin them out as soon as the tops became a thicket—placing some under a temporary protection, and others in beds, to be protected there. The minutiae here are everything. The removing of the green parts and leaves lessens the evaporating surface, and takes away the parts likely to damp or shrivel; this damping and bleeding are farther prevented by the action of the quick-lime. The older parts of the stem contain a storehouse of organisable matter, which only require the stimuli of

heat and moisture to send out plenty of shoots and roots. The less the means for protection, the later in the spring should the growing processes take place.

There is yet a better mode for those who have any glass, say a two-light cucumber-box, or any amount of glass in a cold pit, at liberty. I adopted it last season, and I did not lose one out of a hundred, though many hundreds were thus saved. I feel convinced, that when the superiority of such plants for blooming freely over young plants struck during last summer and autumn, and the less than a tithe of the trouble, in comparison with young plants, which they involve, as the latter must be picked, and aired, and watered, while the former will need a very minimum of attention, and may, while in their dormant state, be squeezed pretty well as closely as a bundle of sticks, and may be placed in little room; I feel convinced, that when all this is known, fewer Scarlet Geraniums will be consigned to the rubbish heap.

For this plan, we arrange and prepare the plants exactly as detailed above, leaving not a single leaf on, and taking away all the greenest points of the shoots, and well peppering these cut points with lime. Plants, after two years from the cutting, when growing out-of-doors, are apt to become too unwieldy. While the plants are thus being prepared, the pit or bed is made ready for their reception—a small heap of dung and leaves has been previously thrown together, so as to get a brisk heat, and yet entail a small amount of decomposition. Eight to twelve inches thick of this material was spread quickly along the bottom of the pit, and, to prevent the heat it contained getting into the atmosphere at once, a thickness of about four inches of dry sandy earth was quickly spread over it. This earth had been kept dry in a rude shed on purpose. A small quantity of this earth is scraped back at one end, on this a row of plants is placed as thick as they can stand, earth is placed over and among their roots; another row, as thick and close to the other as the stems can be made to interlace or press together, is proceeded with in a similar manner, until the space or the quantity is finished. Now, the minutiae here are of importance. If we had placed the roots in soil at the bottom at once there would have been a chance of damp injuring them; and if exposed to much sun the tops would break before there were roots to support them. If wet, moist dung had been used, the same dangers from damp would have followed; if too much of it, the plants would have been prematurely excited, and then we should have had to keep the plants in a growing state all the winter. The small quantity used, and that in rather a fresh state, kept the roots from a damp bottom, and just presented a sufficient stimulus to call out some fresh fibres; the lower part of the soil was moistened by the moisture rising from the fermenting matter while the surface-soil was dry, and thus, so far as the moisture in the atmosphere would admit, insuring a dry air among the stems. When all was finished, a little more dry earth, containing a little lime and charcoal dust, was thrown all over them, and, with the exception of opening the sashes for a little air in fine sunny days, and two or three times a mere dusting of water from the syringe, and protection from frost, they gave no more trouble during the winter, not having received a drop of water at the roots. For from three to four months these plants were kept so cool and dry that they presented to the uninitiated a mere mass of dead branches. As the sun gained strength in March they began to break all over into leaf; and by April, at farthest, it became necessary to thin them; potting some, and after putting a good handful of earth about the roots of others, wrapping each separately in a handful of moss. These were placed in the best conveniences comeatable—houses, pits, all sorts of covers—and got turned-out, moss and

all, about the middle of May; a few, from their size, making an appearance in a bed at once. We have preserved all the older variegated and Ivy-leaved kinds in a similar manner; but they enjoy a slightly higher temperature than the older Scarlets; and while in cold pits the atmosphere requires to be equally dry, the roots must have more moisture given them; in other words, they will require watering several times during the winter. In their case, likewise, however, it will be generally found, that the old plants bloom more profusely than the young ones.

LARGE PLANTS OF SHRUBBY CALCEOLARIAS IN POTS.

"I saw a number of showy plants of yellow Calceolarias in the large conservatory of the Horticultural Society. When I attempt to grow some on in pots, they will always get shabby." Just so; the plants delight in plenty of moisture and comparative coolness at the roots. They will not long endure a scorching sun upon a red pot. In this coldish, wet autumn, we have never seen the Yellow Calceolarias more beautiful, indorsing all that has been said in this work of the climate they naturally enjoy. Now, by carefully lifting some of the nicest plants from the beds, potting them, and keeping them in a cold pit, or in a cool greenhouse, nice plants in bloom may be obtained from April to July. But the best mode is to strike a pot of cuttings late in May, and in June plant them out in an open, rich border, and lift the plants carefully, and pot them in October.

SHRUBBY CALCEOLARIA CUTTINGS.

"I put in these at the end of September and the beginning of October, but they are not yet all struck. Shall I give them artificial heat to hasten the process?" Better not to any extent; they must have time in autumn. Our own, on a north border, under some old sashes, are not yet all struck, but they are quite healthy, and sure to be all right, if left long enough alone. From the day they were inserted, and watered, and covered, they have had nothing done to them, until about a week ago some grass that had taken leave to grow was extracted, and during several of these frosty nights a little litter has been thrown over the glass. The old sashes being rather open, and the weather having proved rather dull and wet, neither air-giving, nor shading, nor watering, has ever troubled them. Moss was growing between the thick-set plants, all beaded, even in the afternoon, with dew-drops, and the Calceolarias seemed rather to enjoy it. In our excessive kindness in giving these plants heat and dryness, we have insured, as has already been demonstrated, a sickly vegetation and abundance of insects. Were I under the necessity of having large plants of these in bloom early in summer, in greenhouses, I would keep the pots as much as possible from the sun, by shading, or plunging them, either in soil, moss, &c.; expose the plant to all the light it could get, and plenty of air, whenever the temperature was a few degrees above freezing; and whenever water was wanted, using that liquid in a cool state, and not only at the roots, but literally all over the foliage. The same low temperature, moisture, and freedom from a stagnant atmosphere, are the essentials requisite for cuttings and young plants in autumn. When, at times, any of them do damp or mould off, this is less the result of mere moisture than a stagnant atmosphere loaded with malaria. At the request of many who have been unfortunate with these ornaments—without which now our flower-gardens would be blank indeed—I have reverted to these simple matters. Many have asked if I kept such young plants in such a rickety concern all the winter? This I have not yet done, as in severe weather I should want so

much material to keep frost out. I generally raise and plant them thickly in shallow, narrow, wooden boxes, which are then placed in similar circumstances, or in an empty house, but with a south aspect, or one south-east or south-west, which thus permits more air to be given, and makes the plants more robust. Where there is a little room to spare in a cold pit or frame, a few old plants taken up with good balls, and planted in earth as close as they will stand, would furnish a nice supply of young shoots in March and April, which, as cuttings, would strike them in a slight hotbed in as many days as weeks would be required in autumn. Unless for this purpose, and the large specimens referred to above, this seems all the use that old *Calceolaria* plants are fitted for, as with half the attention, those tiny things struck in autumn will beat these older ones hollow for symmetry and beauty before the middle of July has arrived.

Some other friends have asked me, why I place these cuttings on a north border at all in autumn; if I practice moving them to a more southern aspect in winter? Just for convenience sake, and the saving of labour, place them at once on a south aspect, say in the end of September; and suppose you have a sunny October, just calculate how many journeys you must have after them, to water, syringe, shade, and remove shade, all of which labour is reduced next to nothing when the cuttings are placed on a north aspect. In a good frame, they would, no doubt, stand there secure all the winter; but, for the reasons named, I prefer moving them about the end of November. Towards the beginning of April they are planted on a south or west border, with protection, and form nice stubby plants by the middle of May. R. FISH.

STOVE FERNS.

(Continued from page 144.)

CYRTOPHLEBIUM.

A WELL-DEFINED genus of Stove Ferns, formed, by Mr. J. Smith, from *Polypodium*. The name is derived from *kyrtos*, curved, and *phelbs*, a vein; all the principal veins being beautifully curved upwards, and the mid veins between them curved also. There are two seed-cases on each of the middle veins. These may be considered the peculiar characters by which any of the species may be known to belong to the genus.

C. ANGUSTIFOLIUM (Narrow-leaved).—A South American Fern. Fronds long and narrow, growing thickly on a short rhizoma. Increased by division.

C. DECURRENS (Decurrent).—A rather tall-growing, handsome Fern, from the Brazils. The fronds grow from two to three feet high, and are pinnated, each pinnae are from six to eight inches long, according to the size of the frond. As this Fern grows erect and compact, it may be grown in a moderate-sized stove. Readily increased by division.

C. NITIDUM (Shining).—Of all the genus, this is the most upright and stiff-growing species. As it is a native of the West Indies it requires the heat of the stove. The fronds are often two feet long, and of a shining deep green colour, growing on a short, blunt, scaly, and creeping rhizoma. I have grown this Fern very successfully in a deep shade far from the roof, where it served to hide the naked stems of several tall plants of *Ficus elastica*. The peculiar form of the veins is the least seen in this species. Increased slowly by division.

C. PHYLLITIDIS (Hart's-tongue).—A West Indian Fern, with simple fronds. Similar to the last-named species, but the leaves are narrower, rather longer, and undulate, or wavey, paler green, and more leathery, and it attains a larger magnitude. Requires frequently re-

potting, or it will become pot-bound. I have had a plant fill a pot densely with its feathery roots in a month's time. If kept too long in the same pot it then requires so much water to keep it from flagging that the earth becomes sodden, and the fine roots perish; the plant becomes sickly, and the leaves lose their bright green, becoming of a yellowish hue. This is, indeed, the case with most Ferns, but more especially with the species belonging to this genus.

C. REPENS (Creeping).—A West Indian Fern, with a creeping rhizoma running to a considerable distance. The fronds are simple, that is, not cut or pinnated; each leaf reclines, whereas all the others stand erect. In addition to this ample specific distinction, the upper side of the frond is covered with white scales. It is a proper plant to ornament rock-work, or to plant on a rustic block of wood, or even to place in a rustic basket. Increased very plentifully by its creeping rhizoma.

DICTYOGLOSSUM.

Divided from *Acrostichum* by Mr. Smith. The distinguishing characteristic of the genus consists in the seed-cases being densely scattered over the under surface of the fertile fronds, excepting on the margin, which is clear of them. The name is derived from *diktyon*, a net, and *glossa*, a tongue, alluding to the veins crossing and re-crossing each other, and the tongue-like shape of the fertile fronds. There is only one species, namely:—

D. CRINITUM (Hairy).—A curious hairy Fern, from that rich island of Ferns, Jamaica. The fertile fronds are very distinct from the barren ones; besides being seed-bearing, they have a stem, or stipe, six or eight inches high, which, as well as the upper side of the frond, is covered with narrow black hairs. The leaf itself is oval, tapering to the point, whereas the barren frond is more broadly lanceolate. Both grow about a foot long, and eight inches broad at the widest part. The fronds are placed upon a stout, creeping rhizoma, by which it may be increased, though but slowly, by division. Though a broad-leaved Fern, it grows within a small compass, and, therefore, is suitable for a moderate-sized stove.

DIPLAZIUM.

In this genus, formed by Professor Swartz, the cultivator of Ferns will find several that he has known as *Aspleniums*. They are separated on account of the seed-cases being placed in pairs, with each back opposite, on a single small vein; hence its characteristic name, from *diplazo*, to double.

D. ARBORESCENS (Tree-like).—A tall Fern from St. Helena, nearly hardy enough for the greenhouse. It grows beautifully planted-out in a shady part of a conservatory. Fronds bipinnate; the lower pinnae spread out, the upper ones gradually shortening in. They grow three feet long, and are of a pleasing light green. The leaves are cut at the edges. The stems are scaly, and the root-stock is erect. It must be increased by seeds.

D. COARCTATUM (Close-pressed).—A handsome Brazilian Fern, reaching a foot-and-a-half in height. The fronds are pinnate; the pinnae with a foot-stem to each; the leaves are cut at the edges, and thickly set, or close pressed on the stem. The root-stock is erect, consequently cannot be divided, and, therefore, the species must be increased by seeds.

D. DECUSSATUM (Crossed).—This is the *Asplenium decussatum* of Wallich. It is an East Indian species, rather coarse in habit, but a free grower. Fronds pinnate, and covered with woolly-like hairs. It grows three feet high, and is easily increased by its creeping rhizoma.

D. JUGLANDIFOLIUM (Walnut-leaved).—This is a well-known South American Fern. Perhaps the largest

cultivated specimen is growing in the same house as the *Amherstia nobilis*, at Ealing Park (Mrs. Lawrence's). It is five feet high and as much through. In general, it does not grow more than two feet high. The fronds are pinnate, and of a bright green; leaves large, and slightly cut; rootstock bundled, that is, many heads of fronds set upon it. One or more of these, taken off close to the base, and placed in pots, under a handlight, in heat, soon emit roots, and form good plants.

D. OTITES (Otites).—A Brazilian Fern of considerable beauty. The *Asplenium Otites* of Link. Fronds eighteen inches long, pinnate, and of a lively green; margin deeply cut. The stem is scaly, and is placed upon an erect root-stock, consequently, requires to be increased by seed.

D. PLANTAGINEUM (Plantain-leaved).—The only one of the genus with simple fronds. It is from the West Indies, and is of a dwarf habit, producing young plants from the base of the frond. The fronds are nearly all fertile. On account of its dwarf habit it is suitable for small collections. Increased in the same way as *D. juglandifolium*, or by its buds at the base of the fronds.

D. SHEPHERDII (Mr. Shepherd's).—A beautiful Jamaica Fern, named in honour of the late Mr. Shepherd, of the Liverpool Botanic Gardens, a most successful cultivator of the tribe. Fronds pinnate, growing a foot or more in height; seed-cases very regularly and beautifully arranged. It is a lovely Fern, and may be increased by division.

T. APPELBY.

(To be continued.)

THE NARCISSUS.

THIS early-blooming flower, one of the harbingers of clear skies and fine spring weather, is an universal favourite, and is desirable on account of its beauty, fragrance, perfect hardihood, and early flowering. As a florists' flower, the species have been hybridized and greatly improved. The Narcissus may be divided into three classes, as follows:—

1st. The Polyanthus (*Narcissus Tazetta*), the varieties of which are the common white, the sulphur, and the white and yellow. Of these there are a great number of named kinds; such as, for instance, *Grand Monarque*, *Grand Duc*, *Soliel D'or*, and *Paper White*.

2nd. The Jonquil (*N. Jonquilla*), is named from its rush-like leaves. Of this class there are the Single sweet-scented, and the Double sweet large-flowered.

3rd. The Daffodil (*N. pseudo-narcissus*) which, in its original state, is found wild in woods, in strong soils, in Britain. Of this class there are the Common-double, the Double, with white petals and a yellow cup; the Least Daffodil (*minor*), the *poeticus*, with a crimson edged cup, and many other intermediate varieties.

E. Leeds, Esq., of St. Ann's, Manchester, has lately bloomed some very splendid varieties, some of which are figured in the "Gardeners' Magazine of Botany," (Moore and Ayres), for the year 1851, published by W. S. Orr and Co. As Mr. Leeds has successfully proved that this flower may be greatly improved by the usual methods florists resort to for that purpose, and which I shall describe by-and-by, I think the committees of Floricultural Societies ought to afford the encouragement for their production that they have so effectively done to the Auricula, Hyacinth, and other florists' flowers. For early spring shows, a table of Narcissi would be an attractive addition, in conjunction with the other already-valued early prize flowers.

That this flower can be greatly improved, we have the example of the Dutch florists, as well as that of Mr. Leeds, mentioned above; and in order to induce the readers of THE COTTAGE GARDENER to enter into this almost untried field (at least in this country), I shall

endeavour to describe the means and method they ought to adopt.

I shall divide the subject into the following sections: 1st. The Properties. 2nd. Propagation. 3rd. Winter Culture. 4th. Summer Culture.

Section 1. *Properties of a good Narcissus*.—This point, every cultivator intending either to grow for competition, or to improve the breed, ought to study and remember—

1st. The stem should be strong enough to bear the flower erect without support.

2nd. The outer petal should be broad, flat, and as round as possible; the inner petal, or nectary, should be cup-shaped, perfectly round and smooth at the edges. If edged with any colour, it should be uniform, not broken, or running down in stripes into the lower portion of the nectary. The other colours should be clear and bright.

3rd. Double flowers, such as the *Jonquil*, should be perfectly so, the whole forming three parts of a ball, the centre being well filled up.

4th. Varieties bearing many flowers on each stem, such as the *Single Jonquil*, and the *Polyanthus Narcissus*, should have the short flower-stems, or peduncles, all nearly of the same length, and all of the flowers open at the same time. Each pip of these many-flowered varieties should have all the properties described in No. 2.

2. *Propagation: by Seed to obtain New Varieties*.—Here I cannot do better than quote Mr. Leeds's directions, given in the work I have already referred to. Mr. Leeds says—"To obtain good varieties, it is needful, the previous season, to plant the roots of some of each kind in pots, and to bring them into the greenhouse in spring to flower, so as to obtain pollen of the late-flowering kinds to cross with those which otherwise would have passed away before these were in flower. With me the plants always seed best in the open ground. When the seed-vessels begin to swell, the flower-stems should be carefully tied-up, and watched until the seeds turn black; I do not wait until the seed-vessels burst, as many seeds in that case fall to the ground, and are lost, but take them off when mature, with a portion of the stem, which I insert in the earth in a seed-pot, or pan, provided for their reception. I place them in a north aspect, and the seeds, in due season, are shed, as it were, naturally, into the pot of earth. I allow the seeds to harden for a month on the surface before covering them half-an-inch deep with sandy soil. The soil should be two-thirds pure loam and one-third sharp sand; the drainage composed of rough turfy soil. In October, I plunge the seed-pots in a cold frame facing the south, and the young plants begin to appear in December and throughout the winter, according to their kinds and the mildness of the weather. It is needful, in their earliest stage, to look well after slugs and snails."

To recommend and encourage the raising of seedlings, Mr. Leeds says—"I think much remains to be done in the production of fine hybrids of this beautiful tribe of plants; and it may be mentioned, these are not ephemeral productions, like many florists' flowers, but will last for centuries, with very little care, as the common kinds have done in our gardens."

This gentleman I have the pleasure of being acquainted with, and a more enthusiastic lover of flowers does not live. His garden I have had the pleasure of visiting for several years, and always leave it with regret, because I have never had time enough to see all its treasures. He is rich in hybrids of many flowers unthought of as capable of improving by hybridizing. I should enjoy, if present, a meeting between him and our equally enthusiastic, in hybridizing, Mr. Beaton.

To return to our subject. It is necessary to advise the cultivator, who may attempt the improvement of this

"beautiful tribe of plants," how to proceed in the work as to ensure, as far as possible, that improvement; and here, again, I must take the liberty of quoting my friend:—"There is no end of the varieties and elegant forms that may be obtained. It is quite clear, however, that *incomparabilis* is no species. I think *bicolor* is not a species; and that the number of species is *very small*. The late Dean of Manchester mentions *N. montanus* as being difficult to seed. I have three crops of seedlings from this crossed both with long and short-tubed kinds. It will cross with *Ajax*, *poeticus*, and *angustifolia*, and, I think, with *Jonquilla*. *Calathina* never seeds with me, but its pollen fertilizes the long-tubed species. *Bicolor* seeds occasionally, but not freely. They will cross with *angustifolius*, *poeticus*, and *poculiformis*, also with *pumilus*. *Moschatus* and *tortuosus* seed pretty freely; they will cross with any of the long-tubed kinds, and the produce is always beautiful."

The reader will perceive in the "Gardeners' Magazine," vol. 1, page 169, that the way of hybridizing is not described in the foregoing extracts. In my next, I will endeavour to describe how that should be done. In the meantime, any one intending to enter into this very interesting field of improvement should lose no time in procuring and potting the varieties mentioned, in order to have flowers to operate upon next spring.

T. APPLEBY.

(To be continued.)

PRESERVATION AND STORING OF ROOTS.

(Continued from page 125.)

HAVING, in my first paper, treated of the mode of preserving and storing the *Mangold Wurtzel*, it is now my intention to bring under consideration the *Carrot* crop, showing the difference in management required for open field-feeding of sheep, and that of storing for house or yard-feeding of cattle, swine, &c. The White Carrot, owing to the great value and feeding properties of the greens, requires somewhat exceptional management, as compared with either Mangold or Swedish Turnips.

In order, therefore, to obtain the full advantage of the greens for feeding, it is necessary to commence lifting the crop at an early period, and in case of a large breadth being grown, it is requisite to begin digging the roots before they are arrived at full size and maturity, and often as early as the beginning of October. For, although the roots, in most seasons, will continue to increase in size long after that period, yet the large and gross foliage of the plants, when taken up thus early, will amply compensate for any loss incurred by the roots not being matured. It must also be borne in mind, when the above plan is pursued, the greens may be made use of for feeding milch cows, sheep, and pigs, for three or four months in succession. It will, therefore, be desirable not to lift the crop faster than the cattle or sheep can consume the leaf, for the roots, unlike Mangold, will not rot from the effect of frost, and may be allowed to remain in the land as long as the greens are fresh, and yield a profitable amount of food; which, however, rapidly diminishes in quantity and quality, in most seasons, after the beginning of the month of December. I have found the Carrot quite as hardy as the Swede, if allowed to remain in the land undisturbed,

and if taken up at all seasonable times, when the weather is open, they may be then put into store-heaps with perfect safety.

I would, however, here observe, that although they will not rot from the effect of frost, to any greater extent than the Swedish Turnip; yet both these roots will lose more or less of their feeding value after being frosted. When this crop is intended for feeding sheep in the field, it is best to take up the roots, and put them into stacks of one hurdle square, or into heaps, in advance of the sheep, having the roots cleaned fit for the cutter at the time of digging, and that portion of the crop required for feeding, till the month of January, in ordinary seasons, will not require covering of any sort.

For feeding during the spring months, the roots should be placed in small heaps, containing about fifteen or twenty bushels, and covered with a little earth; this is desirable, not only to protect them from the weather, but to prevent the depredations of hares and rabbits, which animals are especially fond of them, and will travel miles during the night season to obtain their favourite food.

I am now arrived at that part of the subject which relates to the storing of this root for the feeding of cattle, &c., in house and yards, &c., and for this purpose, the roots should be put away in such a manner that they may be preserved sound and nutritious till the latest period. After taking up the roots, the greens should be removed with a sharp hook, cutting off a portion of the crown of the root, which will answer the two-fold purpose of preventing the roots from sprouting so early in the heap, and, also, of holding the leaves together, which will prevent waste, and facilitate the carting, by diminishing labour.

It is not necessary to clean the roots when required for late use; I rather prefer them put into stack with a portion of earth attached, for by this means they keep better, being more cool, and less affected by the circulation of air in the spring months; the effect of which is to cause them to grow out, thus reducing the feeding value, and inducing a tendency to decay. For the same reason, I would, also, place the stacks, or heaps, where they may be shaded by trees or buildings, and give them a thick and substantial covering of earth. The manner of making the stack may be best effected in the way recommended for Mangold, by placing the roots in heap, from five to seven feet wide at bottom, and carried up to a point at the top, the length being extended as circumstances may require.

It has been urged, by some parties, that the expence of lifting the crop is so great as to prove a serious drawback upon its value. It is, therefore, necessary that I should here call attention to the facts of the case, not only as to the cheapest method of digging the crop, but, also, how far the value of the greens, as compared with other roots, will serve to compensate for any extra outlay in labour for digging. To decide this point, I will take the tops of a crop of Swedish Turnips, at $2\frac{1}{2}$ tons per acre, value 2s. per ton=5s. I will also take the greens of a crop of Carrots, at 6 tons per acre, value 4s. 6d. per ton=27s. The difference in favour of the Carrot-greens

per acre, as compared with Swedish Turnip, is 22s. I find the cost of digging, cleaning, and cutting off the leaves of a crop of Carrots, about 20s. per acre, when done in the most economical manner, by employing one man to dig, and four women following to clean the roots and cut off the greens.

I must now consider the method best suited for storing and preserving that most important, and generally useful root, the Swedish Turnip. In doing which, I beg to observe, that the best method of stacking for house-feeding, &c., is precisely the same as that recommended for Carrots, as regards the size of the heap, and the manner of making it up; but the covering may be of straw only, and is best laid on similar to the thatch of buildings. Sea-weed is an excellent covering for stacks of Roots, and, where it can be readily obtained, will be found superior to any other materials commonly used for the purpose. In the spring months, when the roots begin to sprout in the stack, they are best turned over, the sprouts rubbed off, and the stack re-formed, as before recommended for Mangold. When the crop is pulled, let the earth be beaten off the roots, without damaging the bulbs; and, at the same time, cut off the leaves, and allow the stem of the Turnip to remain entire. Advantage should be taken of open, mild weather for the work; rain will not injure them, but they should never be taken up for stacking during frost, for in that case they are sure to rot in the heap.* In stacking for open field-feeding of Sheep, they may be put into stacks one hurdle square, and preserved until March, without covering; after that time, if required for use at an advanced period of the season, they may be allowed to remain in the land, being carefully cut down, (excising the greens below the stem of the Turnip), and then taken up as required for use. JOSEPH BLUNDELL.

THE BANK OF FAITH.

By the Authoress of "My Flowers."

I AM sure my readers will forgive me if I make this paper a kind of answer to correspondents. I have something to say to one or two kindly interested hearts, who have a claim to inquire after those who receive their bounty; and I think others will be glad to hear a little more about their poor brethren who have already been introduced to them in these pages. Therefore, with the leave of the Editor, I shall take a new path on this occasion, closing my ramble with a word of exhortation and encouragement from the circumstances before us, which may be profitable to all classes—the rich as well as the poor.

First, then, I address myself to "C.," and to "S. B.," who have so bountifully contributed to the earthly comfort of their poor, suffering, grateful pensioner, William Adams. They will be interested to know, that some months ago, another of our readers kindly communicated a means of curing that dreadful complaint Cancer, which had been successful in two cases, in the very last stage of disease. It was immediately put in practice in this case, and for a time it seemed to have a remarkable effect. Symptoms changed for the better, external appearances improved greatly, and hope strongly prevailed in every heart, even Adams himself seemed to think recovery might be possible. But it has

pleased his Father, in His inscrutable wisdom, to withdraw the hope awakened. The poor sufferer has for the last month been decidedly worse. He perseveres steadily with the means, but they seem to have lost power, and pains and anguish have returned as severely, nay, more severely, than ever. The return of winter may be the cause of the relapse. We cannot tell why or how it is that favourable symptoms suddenly disappear, and chill the hearts of the hopeful; but we shall know, *one day*, the wise and merciful reasons that are now hidden from our eyes; and all that we have to do *here*, is to fulfil our plain and scriptural duties, and believe that "all is well."

If "C." could look through the little window at the joyful expression which lights up both their faces, when the weekly donation (of tea, sugar, soap, candles, &c. as the occasion requires) is given in, it would make his or her heart swell, and the grateful thanks and blessings which they always beg may be sent in return, will, we trust, descend as dew upon the head of the generous giver. The donation sent through the hand of "S. B." has been greatly beneficial already. Poor Adams, who dreaded the cold of winter beyond expression, is provided with a warm Guernsey frock, in which he lies, and a large, thick, warm, flannel wrapping gown covers him completely round, when he gets out of bed so often by night and by day. Oh! the blessing of these comforts to the suffering poor! It will also enable me to provide him with firing through the dreary season before us, if his life should last. He is obliged to have a fire all night, as he is often out of bed for a long time, and the cold he suffers is beyond description at such times. Wonderful are his trials; wonderful are his helps and mercies; deep is his gratitude, almost too much for speech. Another friend, his first friend, "J. S.," has been more frequently informed of poor Adams' situation, therefore, I need only say to him, that his name is borne on the poor sufferer's heart before the throne—and that if his unwearied endeavours to relieve and cure him fail, his "reward will," nevertheless, "be great in heaven."

And now I turn to "COMFORT," who has patiently waited to know the end of his most kind assistance towards putting the "Poor Widow's" coal shed in habitable condition. It was impossible for her to exist in it, under any circumstances, during the winter—she would have died of cold and ground-damp. Before the generous donation arrived, a plan was forming for removing her to a more healthy place; and I have, therefore, set aside the money to assist in paying the rent, which was the only stumbling block in our way. "COMFORT" has, therefore, the happiness of knowing, that he was the chosen of the Lord to bring help to this poor widow, and enable us to make her comfortable for the winter. She now sits in a small, but dry and cheerful cottage, with her book upon her lap, ready, as she says, to break out into praise in the very roads and streets, as well as by her own fireside, for all the Lord has done for her. She still delights in carrying a morsel to a sick neighbour, and in speaking a "word in season" to all who come in her way. Poor William Adams misses her scriptural and refreshing discourse, for she is now settled at some little distance from him, but she toddles there when she can, and it always does him good. I hope "COMFORT" is satisfied with the use to which his money is applied. He may feel assured that a very grateful heart asks a blessing for him daily.

The "Widow Indeed," continues to enjoy her bounty, also, gratefully, savingly, and exceedingly. She "shrinks" her tea and coal as much as ever she did; and when I tell her her friend has sent her more, she says, "Won't he be angry if I use so much?" but still she sits warmly and smilingly in her clean kitchen, and nothing makes her "afraid."

I remember, when first we went to see William Adams, he spoke to us of a little book he once read, called "The Bank of Faith." It was the experience of one whose faith was very strong, and whose blessings seemed to come at his very beck and call. It had struck him much, and he expressed a longing wish that he might possess such faith. We often remind him of this circumstance. He did at that very moment possess it, and his cry entered the ears of "the Lord of Sabaoth." From *very distant* parts of England the Lord has called His servants to minister to his wants! No less than three have been bidden to sustain him, and the very things his afflictions needed have been supplied! The

* The plan of pitting, or making into small heaps, covered with earth only, is much practiced in some parts, particularly where likely to be damaged by hares or rabbits, and, if the work is done in mild weather, the roots keep well.

"Widow Indeed" was in extremity, but she clung to the Promise, and it kept its word.

The "Poor Widow" was in trouble, but she also knew and trusted Him who had led her forty years in the howling wilderness of trial; and she has reached the haven of worldly quiet at last. There is a worldly deliverance for believers, as well as a spiritual one; and, where the trial cannot be removed, it is deprived of all its bitterness.

Readers! there is a "Bank of Faith" for every one of us. Large and glorious Promissory Notes are given to all, "without money and without price." The Bank is always open; by day and night we may enter it. It never stops payment, it is always in full activity. What says the Banker who issues these Promissory Notes? What does He promise? "Whatsoever ye shall ask in my name, that will I do, that the Father may be glorified in the Son." "Verily, verily, I say unto you, Whatsoever ye shall ask the Father in my name, he will give it you." "Ask, and ye shall receive, that your joy may be full." Oh readers! what a Bank this is! Where is your faith? Why do you not carry in your notes also? Why do you not receive the promise? Hear what the Banker's clerk says about you: "Ye lust and have not: ye kill and desire to have, and cannot obtain: ye fight and war, yet ye have not, because ye ask not. Ye ask, and receive not, because ye ask amiss, that ye may consume it upon your lusts."

Ah readers! this is the why and the wherefore! Poor Adams and the two Widows have not gone to it as a Bank of Presumption, but as a *Bank of Faith*. Go ye, and do likewise.

GLADIOLUS INSIGNIS.

THIS most beautiful of this splendid genus of Cape Bulbs is not so generally known, or so much cultivated, as it deserves to be. Its fine branchy spikes of bloom, of a rich crimson ground colour, the three lower petals being distinctly marked with a dash of blue, contrast well, and make it one of the most beautiful of all cultivated flowers, for effect, either in the border or on the flower-stand, when cultivated in pots. Having grown it to the best advantage and possible effect in both ways, I subjoin the following remarks as to the means I have adopted in growing the plant, and bringing the blooms to perfection:—

In growing them in the open borders, or beds, I select a good sunny aspect, and prepare the soil by laying a good stratum three inches thick, of well-rotted manure, on the surface, and dig it one spit deep, in the month of September, allowing it to remain rough for three or four weeks, so as to allow the action of the air to render the surface sweet and friable preparatory to planting in October, when the ground is raked down and marked off in rows nine inches apart on the beds. The roots are planted six to seven inches apart in the rows, and four inches deep. The roots do not make much growth during winter, and the only protection I afford them is to throw one inch of sea sand or light litter on the surface, so as to prevent the frost from cutting the growth off close to the ground, which materially affects the blooming. As soon as the winter's cold is past, and the warmer days of early spring commence, the beautiful glaucous leaves develop themselves, growing from a foot to eighteen inches long, and hanging down in beautiful curves from the strong flower-spikes, which do not grow in the open air quite so tall as they do under pot-culture; but I think, if possible, the colours are richer, and a good bed of *Gladiolus insignis* is a gorgeous sight, lasting from the middle of June until the end of July. The leaves then decay, and the roots are taken up, the soil shaken from them, divided, and placed in baskets on a dry shelf until the planting season comes again.

In pot-culture, I have used good, healthy, friable loam, with a third portion of lighter compost, so as to render it open, potting the roots, singly, in forty-eight size or five-inch pots, in the month of October, and watering sparingly until the bulbs have formed good roots, and commenced their growth, keeping the pots on a shelf with a cool bottom, in the greenhouse, or in a cold-frame or pit until the month of February, when I repot them in a twenty-four size or eight-inch pots, placing over the crocks, at this potting, a

small quantity of well-rotted manure, and using the same compost as before, placing them in a more sunny aspect, and watering freely and occasionally with liquid-manure. They throw up branchy flower-spikes from three to three-and-a-half feet high, in the latter end of May, or commencement of June. Often two or three spikes from a single root, of the rich colours described above, producing a most beautiful effect. As the leaves do not grow much after the plants have bloomed, I remove them to a shaded place, out-of-doors, and gradually withhold water until the leaves have died off, when I knock them out, generally having two or three strong roots from each pot, besides offsets, which I bag off, and place on a dry shelf until the potting season returns.

I assert, with confidence, that there is no plant more deserving of general cultivation than this beautiful variety of *Gladiolus*; the strength of its habit, the comparative hardiness of its nature, and the richness of its colours, all conspire to make it admirable. If grown in a poor soil, and unsuitable situation, it does not make so much effect; but even then, if the roots planted are healthy and strong, the vigour of its growth is such as to excel all the early-flowering varieties I have yet seen or grown, and they are not a few.—CHAS. B. SAUNDERS, *Casarean Nursery, Jersey*.

COTTAGE GARDEN ALLOTMENTS.

IN following up the observations made in a former article, at page 64, on Cottage Gardens, it is superfluous to say more on the advantages which accrue from a well-cultivated garden, for, independent of the profit it returns to its occupier, it acts as a sort of example to the neighbourhood, and stimulates the more ambitious to renewed exertion. I will, therefore, dismiss this "Home Garden" department, and enter on the "Cottage Garden Allotment," which is generally situated at some little distance from the residence, as in many instances a number of allotments lie together, being, in fact, neither more nor less than a field divided into a specific number of allotments. Now, as the working of this plan has been so successful where it has been introduced, I need only simply urge its more general adoption in districts where it is yet unknown, for, besides the advantages it holds out by giving an industrious tone to the working classes, whose spare hours would otherwise be loitered away in something, perhaps, worse than mere idleness, it holds out a good moral lesson, which the most careless can scarcely avoid profiting by. Let us suppose the mechanic just turned out of a broiling workshop, fatigued more by the impure atmosphere and monotonous scenery he has been subjected to, than by the amount of manual exertion he has undergone; his first impulse, after partaking of the ordinary repast, will be to proceed to his garden, and if by accident, or unsuitable weather, he may not have been able to have visited his little holding for some days, it will present many additional attractions to him, besides affording additional employment, which enhances the enjoyment rather than embitters it. Supposing it to be in the early part of summer, and things growing fast, he will see the progress some of his flowers have made; buds expanded into full bloom, which were only formed when he last saw them, and other things showing an advance, increasing the pleasure of anticipation; while seeds that were just sown will be making their way through the ground, and, together with them, he will observe numbers of other plants in the character of intruders, whose removal he will speedily determine on setting about, after, perhaps, taking another look round to see if nothing more urgent demand his attention, as the breaking down of tied-up plants or trees, or anything in that way; besides which, the evening is the best time to weed a seedling bed, for, however careful the operation is performed, it cannot be done without endangering some of the tender plants therein; and supposing the weeds to have attained some size, and overgrown a part of the legitimate crop, removing those weeds in bright sunshine exposes the tender and previously-shaded side of these plants to the full glare of unclouded sunshine, without their having the advantages which even a few hours at night affords them of hardening themselves to endure its presence; now, though plants are

very accommodating, and speedily adjust themselves to the altered circumstances of their condition, yet a little time is necessary to enable them to do it properly, and without sacrifice to themselves. A bed of Onions, when allowed to stand two or three days too long unthinned, certainly suffer much in consequence, for the elongated stem, unable to support itself when its companions are removed by thinning, usually falls down and exposes some part of its hitherto shaded leaf blades to the action of unsparring sunshine, should it be such at the moment; it is, therefore, needless to say that such work as thinning or weeding, which is much the same, ought to be done in dull weather, or on an evening, for the plant, with an instinctive feeling of what it is called on to endure, will speedily erect itself (provided it is not too far gone), and be prepared to greet rather than fear that all-powerful agent of cultivation, "the Sun." To the cottager, we therefore impress on him the necessity of removing his weeds at once; and a scarcely less urgent injunction is to "thin his crops in time;" it is all very well to say that young plants are so accommodating as to regain a sturdy growth after they had been drawn up spindly and weak; this robust habit is attained rather in spite of the mismanagement than by virtue of it; and no one will deny that a loss of time has been sustained in the operation; and hence a sacrifice.

It has been before observed, the Garden Allotment differs much from the Home Garden—a more robust class of produce is generally substituted at the former place, and some of the more delicate or tender ones omitted; flowers do not necessarily enter into the list of articles cultivated in such places; for unless they be of the more common or robust kinds, their presence there is scarcely in harmony with the other crops. However, I do not by any means quarrel with the cultivation of flowers, for here and there a Dahlia, or Hollyhock, or, it might be, a double Sweet William, or Wall-flower, look very cheerful in their way; however, as the more legitimate crop deserves most attention, we will direct our remarks to that, and first beg to say, that a proper rotation of crops is of essential service to a place where so much is expected from a limited extent of ground; and carrying this object out, we must not see the Cabbage succeeded by the Cauliflower, or anything of its own kindred tribe; but contrive to have a root crop, as Potatoes, Parsnips, Carrots, or Onions, always intervening between two such crops. This way of managing the cropping will be more difficult now than of yore, since the Cabbage-worts have formed a more important feature in Garden Allotments where Potatoes are so uncertain a crop. Now, the exercise of a little degree of forethought will make this duty more easy than might be expected; the first crop of Potatoes is off early enough to be followed by Winter Cabbages, and a further supply might follow the newly-cleared Onion bed; while the Cabbages of the previous spring might remain on the ground to furnish nice Greens in the shape of the numerous shoots they are possessed of, until the return of spring reminds the cultivator that root-crops of various kinds will be wanted. Now, we would not by any means sow Carrots after Cabbages, but Potatoes might be planted, and that with much less preparation of the ground than is necessary for the well-being of a crop reared from a very small seed, as Carrot, Onion, &c. On the other hand, when such green crops are suddenly removed to make way for an opposite one, some little time ought to elapse in order to allow it to benefit by the changes of atmosphere, which only full exposure will ensure to it; whenever, therefore, a piece of ground occupied by any such crop becomes empty, let it be immediately dug, unless it be so excessively wet as to receive injury by the operation, in which case, it may, perhaps, be better lying in a solid condition than in a fresh-turned-up one. This subject, having attracted much attention amongst farmers, will, probably, be treated of hereafter; in the meantime, let all ground on which Beans, Potatoes, Carrots, Onions, and the like have been grown, be dug and planted with Cabbages forthwith, and whatever may be the character of the ground, light, or very stiff, observe, there are no medium courses of cultivation, it must either be dug or ridged up to receive the benefits of the frost, or it may be made firm by treading over it, &c., which would not be the case were Cabbages, &c. dug up, and the holes they came from allowed to remain loose, as so many basins, to receive

all the rain-water that fell to stagnate there to the injury of everything growing near them; better would it be, after removing a crop of Scarlet Runners, or such like, to tread and smooth the ground well that would not endure digging—by this means, you will prepare a hard sealed-up surface, which, though impervious to the admission of the air, to a great extent, is still more so to the rain, and, consequently, escapes the souring which a too-much soddening with water incurs. But as the digging and trenching of ground, under the various conditions in which it may be placed, affords a wide field for inquiry, I will leave that for another opportunity; and, in conclusion of the present article, repeat the advice to all parties of trying what they can to increase the utility of Garden Allotments, where they do exist, and where they do not, to endeavour to introduce them, and the result will, in most cases, be not only beneficial to the occupants, but advantages also the proprietor.

J. ROBSON.

GREY SHANGHAES.

BEFORE proceeding to the substance of C. H. B.'s reply to my last, I would suggest, in reference to the concluding paragraph of his letter, in which he requests you to publish his name, in order "that at least some of your readers may know whether he is capable of forming an opinion on the subject," that had he appended to the name he subscribes, that of "Timothy Mason" (a *nom-de-guerre* by which he is familiarly known to most of your readers) he would have attained his object more effectually, and conduced to a still wider appreciation of his claims in this particular, as also of his right and title to be considered the fair and impartial disputant he professes.

Mr. Brown evades my first challenge, on the pretext that two birds cannot be taken as a sample of "the whole Grey variety;" but this is a difficulty of Mr. B.'s own making; for my proposition refers, as he must know (for I have throughout specially insisted on the distinction), not to "the whole Grey variety," but to a *single and distinct strain* of that variety; a strain which a year since had scarcely been heard of in this country, and a little more than two years ago was unknown even in America, whence the samples in this country were derived. But if my proposal to send "one or two pairs" for your inspection does not satisfy him, and this is his only objection, I will most willingly extend the number to *one dozen*; which, indeed, would be about all I possess, or could send of a suitable age. Will Mr. B. pretend that twelve birds are too few to constitute a fair sample of the produce of a strain, which, as many months since, was unknown to our poultry fanciers, and of which, up to the date of Mr. B.'s, in a tone of infallibility, fulminating his anathema at them, as "a very coarse variety of the ugliest of Shanghaes, very deficient in all the beauties we are accustomed to look for in Buff and other colours," scarcely that number of genuine uncrossed specimens had been imported, if I except the nine birds presented to Her Majesty?

Touching the excuses alleged for not accepting my second challenge, though I think Mr. B. might have found a more potent reason than any he has advanced for not acceding to both proposals; still, as it is not in my power to remove the obstacles he has found it convenient to raise to my second, I must let them pass for what they are worth, expressing, however, my own suspicion that were there "the will" there would not be found wanting "the way."

I come now to what Mr. B. seems to consider the really serious part of his letter, that, namely, where he declares his willingness to break a lance with me. "But all jesting aside," he says, "will W. C. G. kindly state on what terms he will undertake to show the best Grey pullet he can produce, for all properties, except colour, against the best one I can produce of some other shade; this will meet the question more fairly"! Now, before showing Mr. Brown (for I will not insult your judgment, Mr. Editor, or that of your readers, by supposing you will need the demonstration) the absurdity of this proposition, I beg to say, that whether fair or unfair in itself, it does not "meet the question" *at all*: for the purport and intention of my letter and challenge was,—not to prove that out of some two or three dozen Brahmas (to about which number alone of genuine specimens could I possibly have access) I could find a bird superior to one of

any other colour, selected by Mr. B. out of more than as many thousands,—but simply, on the one hand, to afford Mr. B. an opportunity of proving, in opposition to my distinct denial of its truth, his assertion as to the identity or equality in point of merit, of the two strains known respectively as “Brahmas,” and “Mr. Stainton’s Greys;” and on the other, to induce him to give me an eligible opportunity of disproving the alleged worthlessness of Brahmas, so authoritatively pronounced in his first letter, and maintained in his second. Rejecting both these offers to submit the matter to arbitration, he gravely, and “all jesting aside,” proposes the above, as “meeting the question more fairly.” But, granting for a moment that it does, in Mr. B.’s view of it, in some undefinable way, meet the question at issue, will any one but Mr. B. say there would be the smallest reasonableness in being asked to show, in a competition for the best *turnip* (to illustrate the case by carrying out his own simile), one of a quite new variety, howsoever excellent, taken from a patch of some twenty square yards of unmanured and untilled soil, against another selected from a breadth of some twenty acres of all other varieties grown on land brought to the highest possible state of fertilization by the practical energies and high farming of a Mechi or a Philip Pusey; for this is virtually what he asks me to do! Will any one, besides Mr. B., maintain that there is any semblance of fairness in asking me to show a bird of a strain, which, twelvemonths ago, was unknown in this country, and of which, even now, the whole genuine produce could be comfortably lodged in an ordinary-sized poultry house, against a specimen chosen from the countless produce of the numerous other strains, which, for the last five or six years have inundated us, and which, during that period, under the stimulus of keen competition and extraordinary prices, have had the exertions of a hundred experienced breeders directed towards their improvement; every effort having been made, by means of fresh strains, and each year better crosses to develop in them the most approved characteristics of the breed.

Before I had even an idea of C. H. B.’s cognomen, I had heard some curious anecdotes of one Timothy Mason, but nothing certainly that would argue the want of tact or ordinary capacity, so patent in this proposition. Truly, though not indisposed to reciprocate civilities with him, I cannot, in this instance, return the compliment he has paid me, of well weighing my propositions before making them; had he done so, he would have stayed his pen ere he risked his credit for fairness, by making *THE COTTAGE GARDENER* the medium of so quixotic a proposal.

There is little in the remainder of Mr. B.’s letter relevant to the objections urged in mine; it appears to be an attempt, by a sort of special pleading, to draw off the attention from the chief points in discussion. In one place he asks, “will W. C. G., or will anyone else say explicitly in what their (Brahma Pootras) superiority consists.” If Mr. B. intends, by this expression, their “superiority over all other varieties,” he ought to know that I have never ventured to claim for them such superexcellency, unless as a mere matter of opinion, in the particular of showiness and attractive beauty of plumage, an opinion affecting merely individual taste and fancy, and one in which I know many owners of Buffs disagree, but one, also, in which I have good grounds for believing the majority of those who have not had their predilections established by the possession of either variety coincide with me; but at any rate, it will be time enough to reply to this question when Mr. B. has given me the opportunity I ask, of disproving the *inferiority* he attaches to them; and if, by accepting my challenge, he can prove the affirmative of his position, viz., their vast inferiority, it will of course involve, at the same time, an ample solution to the above question.

Let me now, before laying down my pen, give your readers two or three specimens of Mr. B.’s accuracy in the statement of facts. Wishing to make it appear that he “might have had these fowls, had he so wished,” at their earliest introduction, he says, “It was I who first directed Mrs. Hosier Williams’s attention to Dr. Bennett’s work on American Poultry, the perusal of which led to the first introduction of Greys into this country by that lady. Before ordering these birds, she sent me the book for my opinion on it, but, as the engravings would have disgraced a child’s penny primer,

and the matter was exceedingly vague, I did not like to offer one; but these Greys were selected, as the lady felt anxious to introduce what she supposed would be new in this country.” Now, it so happens, for the convenient upsetting of this statement, that Dr. Bennett’s book *does not once mention* either Brahma Pootras or Grey Shanghaes, nor in any way whatever allude to this variety; and for the simple reason, that at the date of the publication of that book, in 1851, the original birds had only recently been brought to America, and were then known only to two or three individuals, from one of whom Dr. Bennett afterwards procured his birds! Continuing his veracious history, Mr. B. says, “They (the Brahmas) were exhibited at Birmingham, escaped notice, and were afterwards bought in at an auction, at a nominal price, while Turner’s half-bred 10s. Greys received the prize,” &c.

1st. Now, the only two pairs of so-called Brahmas (my own pair, at least, were only half-bred Brahmas, certainly not genuine Shanghaes) exhibited there, were *not* put up nor bought in at any auction. 2ndly. They did not compete, as Mr. B. here distinctly implies, with Mr. Turner’s “Greys,” which were not at the same show with the Brahmas, but in that of the previous year, viz., 1851. So much for the accuracy of the statements Mr. B. volunteers on a subject he would have us believe he knows so well; and on the pretended accuracy of which knowledge he grounds his chief claim to be considered an authority.

W. C. G.

[Here the conflict had better cease, for the judgment of competent authorities are in course of being obtained upon the so-called Brahma Pootras. Four pens, from different breeders, were exhibited at the Winchester Show, as recorded in our last; and we know the collective opinion of many good authorities there assembled is that they are a good Grey variety of Shanghaes.—Ed. C. G.]

CULTIVATION OF CHICORY IN GUERNSEY.

CHICORY began to be grown in Guernsey in 1844 or 1845, and its cultivation increased rapidly until 1851, when the different dispositions of government caused it to fluctuate much, and to decrease down to the rate of the present year. At that time no less than six hundred acres of it were in cultivation in our small island, and which fetched £2 a ton from the field, the average produce being about ten tons to the acre, making £20 an English acre—£12,000 in all. The advantages are, besides this handsome return, that a second or even a third crop may be grown, and it may also be followed by other roots; cattle also eat it, but I do not believe it will ever be a favourite feeding-root. The disadvantages are the expenses of the culture—not manuring, because it requires nothing more than for other roots—but the weeding and digging, the only remedy for which is sowing in drills at about a foot distance, and turning over the roots with a very deep, narrow plough, with at least six horses, followed by men with digging-forks, to clear the Chicory from, and throw it on, the soil. The other evil is, that from the root being so full of life in every particle, and being easily broken, it leaves a really bad weed in itself for succeeding crops. The best remedy found here is to grow Parsnips, which are always carefully weeded, after Chicory, then Vetches, followed by Turnips. The price is now thirty shillings a ton, which reduces the value one-fourth; still, in the absence of the Potato, of which about £18,000 worth have been exported in former years, the culture of the Chicory is valuable, if it could only be stable. During the fluctuations in 1851, mentioned above, some of the merchants got a few of the farmers to give their Chicory at ten shillings a ton, which was ruinous. Such are the most important traits of Guernsey culture of Chicory, which I understand you wish to collect, and which are very much at your service.—A GUERNSEYMAN.

DERBYSHIRE AND MIDLAND COUNTIES’ EXHIBITION.

THE first annual Exhibition of Poultry of the Derbyshire and Midland Counties’ Society, was held in the County

Hall, at Derby, on the 17th and 18th of November, under the patronage of a long list of the nobility and gentry of the county, headed by His Grace the Duke of Devonshire, the Lord-Lieutenant. The number of pens entered was exactly 370; and when we say that scarcely one was empty, it will be seen, that in point of numbers, at all events, the Exhibition, for a first attempt, was successful. In quality, as is usually the case, the classes varied considerably, but as a whole, we may say that in this respect, also, it was above the average. The place of exhibition was all that could be wished, although, probably, the Society will have to look out for a larger one on future occasions. The arrangements, under the direction of the Secretary, Alfred Madeley (son of the Mayor of Derby), and a small but active and influential committee, were exceedingly good, and the weather being fine a very large and respectable company, especially of ladies, visited the show. On the whole, we may congratulate the Society and its officers on one of the best of the many first exhibitions of this description which it has been our good fortune to witness. The names of the fortunate exhibitors will appear from the prize-list, which we subjoin, but a word or two respecting each class may not be out of place.

Taking them in the order of the catalogue the adult Buff *Shanghaes* first claim our attention. These were not a numerous class, nor, with the exception of the prize-pens, and one other, were they good. The other adult *Shanghae* classes did not number among them one pen of first-rate birds, and from most of them the judges withheld the prizes. This may, in a great measure, be accounted for, by the old birds of this variety not having yet got through the moult, and this opinion is confirmed by the quality of the chicken class, which included a number of very good fowls. All colours were included in this class, and it numbered nearly eighty pens, several of which merited and obtained the prizes which had been withheld from their seniors. The Society will do well, in future, to divide this class. The *Spanish* come next in order, and were well and numerous represented, both in the adult and chicken classes. But the principal feature of this Exhibition, was, undoubtedly, in the *Dorking* classes. The old birds were good, but the chickens were the very best, as a class, we have ever seen. Of those last there were twenty-six pens, and we may safely say that there was scarcely even a middling bird among them. The first prize-pen, exhibited by Dr. Hitchman, deserves especial mention, as they were admitted by all to be the finest pen of young *Dorking* fowl ever exhibited, and the judges (Mr. J. W. Nutt, of Stoke Newington, and Mr. Bond, of Leeds) had no hesitation in awarding their highest commendation to the whole of this class.

The *Game* fowl, divided into five classes, were numerous and good, while the *Hamburgs* were the worst feature of the Exhibition.

In the *Polands*, too, with one or two exceptions, there was much room for improvement.

The *Golden-spangled Bantams* numbered three or four fair pens, but there was nothing worthy of notice among the other varieties.

Next to the *Dorkings*, the *Turkies* and *Geese* were the best classes in the Exhibition. The judges awarded a commendation, very justly, to the whole of the *Turkey* class—those which obtained the prizes being especially good,—as were also the prize pens of *Geese*.

The *Aylesbury Ducks* were also a fair class, but there were no other *Ducks* of good quality, if we except a pen of *Rouen*, and one entered as *White Java Ducks*.

The managers have wisely confined their Exhibition to two days, and to this we should recommend them, by all means, to adhere for the future.

Class 1.—SHANGHAE (OR COCHIN-CHINA). Section 1.—Cinnamon and Buff.)

8. First prize, Mr. James Cattell, 53, Worcester-street, Birmingham. Age, two-and-a-half years. 5. Second prize, Mr. John Harrison, jun., Snelston Hall, near Ashbourne. Age, one year and seven months.

Section 2.—(Brown and Partridge.)

12. Second prize, Mr. William Wanklyn, jun., Bury, Lancashire,

Section 5.—Chickens of 1853. (Cinnamon and Buff.)

31. First prize, Mr. John Harrison, jun., Snelston Hall, near Ashbourne. 63. Second prize, Mr. James Cattell, Worcester-street, Birmingham. Age, seven months and fourteen days. 51. Third prize, Mrs.

Hosier, Williams, Eaton Mascott, Shrewsbury. Age, seven months. 25, 48, 62, 96. Highly commended. 54, 55, 56, 68, 71, 92. Commended.

Section 5.—(White.)

69. First prize, Mr. John Staley, North Collingham, Newark. Age, cockerel and one pullet, about seven-and-a-half months; one pullet, about seven months.

Class 2.—SPANISH. Section 1.—(White-faced.)

102. First prize, Mr. John Harrison, jun., Snelston Hall, near Ashbourne. Age, three years. 104. Second prize, Mr. John Pevey, Sudbury. Age, eighteen months.

Section 3.—Chickens of 1853.

110. First prize, Mr. Edward Woollett Wilmot, Hulme Walfeld, Congleton. Age, seven months. 113. Second prize, Mr. John Williamson, St. Peter's-street, Derby. Age, seven months.

Class 3.—DORKINGS. Section 1.—(Coloured.)

139. First prize, Mr. John Faulkner, Bretby. 134. Second prize, Mrs. Hitchman, Mickleover.

Section 2.—(White.)

140. First prize, Rev. C. J. Newdigate, West Hallam. 142. Second prize, Mr. Hitchcock, Steam Mills, Ilkeston.

Section 3.—Chickens of 1853.

155. First prize, Dr. Hitchman, Mickleover. Age, thirty-three weeks and four days. 151. Second prize, Mr. John R. Rodbard, Aldwick Court, Wrington, near Bristol. (Grey.) Age, eight months and two weeks. 159. Third prize, Mr. William Cox, Brailsford. (Grey.) Age, cockerel, eight months; pullets, seven months. 167. Very highly commended.

(The whole class highly commended.)

Class 4.—MALAY. Section 1.

170. First prize, Mr. T. S. Tunaley, Milfield, Tamworth.

Section 3.—Chickens of 1853.

171. First prize, Mr. James Oldham, Long Eaton, near Derby. Age, cockerel, six months and three weeks; pullets, seven months and one week.

Class 5.—GAME. Section 1.—(Black-breasted and other Reds.)

173. First prize, Mr. Ashton Mosley, Burnaston House. (Red.) Age, fourteen months. 178. Second prize, Mr. J. T. Edge, Strelley Hall, near Nottingham. (Black-breasted Red.)

Section 2.—(White and Piles.)

188. First prize, Mr. Robert Choyce, Bramcote Hall, near Polesworth, Warwickshire. (White.) 190. Second prize, Mr. John Davis, Kirby Muxtal, near Leicester. (White.) Aged.

Section 4.—(Blues and Greys.)

196. First prize, Mr. Henry Roughton, Bramcote, Warwickshire. (Silver Grey.) 195. Second prize, Mr. John R. Rodbard, Aldwick Court, Wrington, near Bristol. (Grey.)

Section 5.—Chickens of 1853.

202. First prize, Mr. G. H. Chawner, Sudbury. (White.) 206. Second prize, Mr. Nadin, Stapenhill, Barton-on-Trent. (Black-breasted Red.) Age, seven months.

Class 6.—HAMBURGH. Section 2.—(Silver-spangled.)

215. First prize, Mr. C. R. Colville, M.P., Lullington, Burton-on-Trent. Age, one year. Disqualified by having four birds. 216. Second prize, Mr. F. Cooper, Cheadle.

Section 3.—(Gold-pencilled.)

221. First prize, Mr. James Oldham, Long Eaton. Birds of 1853. 223. Second prize, Mr. M. Smedley, Clouds Cottage, Stapleford.

Section 5.—Chickens of 1853.

256. First prize, Mr. M. Smedley, Clouds Cottage, Stapleford. (Gold-pencilled.) Age, cockerel, five months; pullets, six months. 254. First prize, Mr. Alfred Smith, Normanton, near Derby. (Silver-pencilled.) Age, cockerel, six months; pullets, five months.

Class 7.—POLAND. Section 2.—(Golden.)

273. First prize, Mr. James Smith, Brailsford. With Beards. 275. Second prize, Mr. J. W. Ward, Repton.

Section 3.—(Silver.)

278. First prize, Mr. J. W. Ward, Repton.

Section 4.—Chickens of 1853.

289. First prize, Mr. John Ault, Brailsford. (Gold.) Age, six-and-a-half months. 283. First prize, Mr. William Cox, Brailsford. (Silver.) 286. First prize, Mrs. C. H. Horsfall, Duffield Bank House, near Derby. (Black.) Age, five months.

Class 8.—BANTAMS. Section 1.—(Gold-laced.)

300. First prize, Mrs. Hosier Williams, Eaton Mascott, Shrewsbury. Age, one year. 299. Second prize, Mr. William Curzon, Derby.

Section 2.—(Silver-laced.)

303. First prize, Mrs. Hosier Williams, Eaton Mascott, Shrewsbury. Age, one year.

Section 3.—(Black.)

305. First prize, Mrs. Hosier Williams, Eaton Mascott, Shrewsbury. Age, eighteen months. 304. Second prize, Miss Fanny Hurt, Alderwasley, Belper. Age, five months.

Section 4.—(White.)

309. Second prize, Mr. G. Chawner, near Derby. Age, six months.

Section 5.—(Any other variety.)

310. Second prize, Mr. George Curzon, Weston Underwood. (Booted Bantams.) Age, two years.

Class 9.—ANY OTHER DISTINCT BREED.

312. Second prize, Miss Fanny Hurt, Alderwasley, Belper. (White Silk Fowls.) Age, six months.

Class 10.—TURKEYS.

320. First prize, Mr. E. W. Wilmot, Hulme Walfeld, Congleton. (Wild American.) Age, eighteen months. 321. Second prize, Mr. S. Stone, Collingwood, Burton-on-Trent. (American.) 323. Third prize, Miss E. Steele Perkins, Sutton Coldfield, near Birmingham. (White.) Age, cock, one-and-a-half years; hens, two-and-a-half years.

(The whole class commended.)

Class 11.—GEESE.

338. First prize, Mrs. Sherwin, Bramcote Hall. Age, six months. 339. Second prize, Mr. John Faulkner, Bretby. 337. Third prize, Mr. Spencer Stone, Collingwood, Burton-on-Trent. (Toulouse.)

Class 12.—DUCKS. Section 1.—(Aylesbury.)

347. First prize, Miss Darwin, Breadsall Priory. Age, four months. 350. Second prize, Mr. James Sutton, Shardlow Hall. Age, five months and four days.

Section 2.—(Rouen.)

353. First prize, Mr. J. Lathbury, Wetmoor Hall, Burton-on-Trent.

Section 3.—(Any other variety.)

361. First prize, Mr. T. S. Tunaley, Tamworth. (Java.) 357. Second prize, Mr. J. Spencer Stone, Collingwood, Burton-on-Trent. (White Call Ducks.) 363. Third prize, Miss E. Steele Perkins, Coldfield, near Birmingham. (Black Labrador.) Age, two about six months; one about seven months.

Class 13.—GUINEA FOWL.

367. First prize, Mr. John R. Rodbard, Aldwick Court, Wrington, near Bristol.

UNITING AND FEEDING BEES.

I WISH to keep through the winter four stocks of bees, if there is any prospect of doing so with reasonable expense, of which, according to the present appearances, there is a poor prospect, unless the food I have been giving is not so beneficial to them as that recommended by Mr. Payne, and others, viz.:—one pound of loaf-sugar, a quarter-of-a-pint of water, and four pounds of honey. What I have been using, is one pound of crushed loaf-sugar, half-a-pint of strong ale, and a table spoonful of white wine, boiled in the usual way, which they take very freely, and is what I have been in the habit of using for ten years. I feed all at night, at the top, in caps of Taylor's boxes, three inches deep, and eleven inches square, turned upside down, and filled with empty combs. I pour the syrup into them, and find the bees take it better out of them than they do from tin or zinc feeders. It has all been consumed by the following morning, so that there has been no loss by robbers. The puzzle to me is, why they have consumed so much during the time, *about a month*, while I have been feeding; and if I am to continue feeding till they come to the weight recommended to keep them through the winter, namely, twenty pounds each, I am afraid it will be a ruinous affair.

I must say this is the worst season I ever experienced for bees, as the accounts are all bad in this part (Cheshire). Those who had early swarms find that scarcely any of them can possibly stand through the winter, and many are dead already.

No. 1 and 2 of my stocks are in square *straw bar-hives*, which I had from Mr. Payne, in the spring, which hives I have a very good opinion of. The swarms were put in each on the 6th of June; they are strong, and have worked very well; have filled the hives down to the floor-boards with combs, and are worked beautifully and even on every bar.

On September 12th, I added a stock to No. 1, by stupefying them with *Racodium cellare*, in the usual way. They united and agreed perfectly. On the 16th of September, they weighed, after deducting the hive and floor-board, only nine pounds one ounce, for bees, comb, and honey; so that if four-and-a-half pounds is allowed for the bees, there was only four pounds nine ounces for combs and honey. I commenced feeding them with the above syrup, gave them four-and-a-half pounds, and to my great surprise, on weighing them on the 21st of October, I found they have only three pounds ten ounces. So they are fifteen ounces lighter than they were before they were fed.

No. 2, I added a stock to on the 12th of September,

weighed them on the 16th, and found that they had only one pound one ounce for combs and honey, after deducting as above. I gave them four-and-a-half pounds of syrup, and they weighed, on the 21st of October, one pound six ounces. So they had gained five ounces.

No. 3, are in one of Taylor's square boxes, eleven inches square, and nine inches deep inside. They are a swarm of 1852; did not swarm this season; put a stock to them on the 12th of September; weighed them on the 16th of October, and they had three pounds four ounces, after deducting as above. Gave them four-and-a-half pounds of syrup, and they weighed, on the 21st, three pounds fourteen ounces. So they had gained ten ounces.

No. 4, are in Taylor's box, as above, a swarm of 1851. They swarmed on the 6th of June. I weighed them on the 16th of September. They weighed eight pounds one ounce, after deducting as above; gave them three pounds of syrup, and they weighed, on the 21st of October, seven pounds eight ounces. So they had lost nine ounces.

I should be glad to know if any of the subscribers to THE COTTAGE GARDENER have tried King's patent hives, and whether they answer the purpose he states in his pamphlet, of uniting the old stock to a swarm taken from it the summer before, and putting it under the old stock in another box till the autumn, then taking the old stock off, cutting out the combs, and letting the bees return to the box the swarm is in; if they would work through the box the swarm is put in peaceably through the summer, and unite well with them in the under box when they are turned out of their own? If all this is effected, it would save much trouble and loss of bees, in either drumming or fumigating; for after ten years of practice in fumigating, I scarcely ever miss a season, with the greatest care, but I have a loss by over smoking. This year, out of six, I had a loss in two. In one I had seven ounces, and in the other eleven ounces, dead; in the other four I lost scarcely one. I find there is a great difficulty in being quite correct in the process; it is scarcely ever resorted to in this part—all go to the brimstone pit! I find there is a great difficulty in getting the bees from between the combs, but I hope to succeed better now, by using shallower hives.—H. HOOD.

[Use no more strong ale and wine for feeding, but sugar, water, and honey, in the manner already recommended.]

Four-pounds-and-a-half is a great deal too much to allow for the weight of bees in a hive at this season of the year;—certainly by one-half, if not more.

The reason of their increasing so little in weight, in proportion to the quantity of food given, may arise from two causes; first, upon close inspection, it may be discovered that since giving the food, *comb-making* has been going on, which will account for it; or, perhaps, some brood may have been hatched off; and it is not improbable but the stimulating nature of the food given may have had something to do in the matter.

King's patent hive we have never seen in operation.—J. H. P.]

HARDY HERBACEOUS PLANTS.

ACHILLEA ROSEA.

THIS, the rose-coloured Milfoil, is so called by Waldstein and Kitaibel, two botanical writers upon Hungarian plants, of which country this beautiful plant is a native.

This plant is closely allied to our indigenous species called *A. millefolium*, and more especially to its red variety, but it is altogether a larger growing plant, and its flowers much larger, and of a deeper dark rose colour. These points render it a most desirable plant for our flower-borders. Its leaves are all bi or tripinnatifid, or many and finely cut. Its flowers are produced in compact spreading heads in June, and more or less to November. Of course, the decaying flower-stems should at all times be cut away as soon as their bloom is over, and the successional stems neatly tied up. This plant generally rises from two to three feet in height, therefore, making a good plant for a second row in the bed or border, or a back or centre row, where the beds are small, or the borders narrow, and is intended to be filled with dwarfish plants.

Any good garden soil suits this plant, but as it is rather inclined to spread about at the root, particularly in light, rich soils; it becomes necessary, in order to keep compact bunches in the flower borders, to replant either every year, or every two years at farthest. This should be done during fine, open weather, in the spring months. At the same time increase can be made of the plants to any extent that may be required. This plant was introduced to this country in the year 1803. T. W.

POTATO MURRAIN.

MAY I be allowed to add my mite of information to the readers of your COTTAGE GARDENER, relative to the disease which has had such an effect upon that most valuable of all roots—the Potato.

The first attack is acknowledged by all to be atmospheric;—if so, in what respect, allow me to ask your correspondents, can the baking or drying system afford a remedy?

Now, I am not about offering a cure, although I wish much that I were enabled to do so; but my endeavours will be to show the effect of such atmospheric influence after the first attack or blight of the stalk, so as to set the matter right for future investigation.

On proceeding over a field of my Potatoes, during the summer, I discovered a partial blight, and on the following day it had increased considerably; I then retreated to a spot that I considered most affected, and took up carefully one of the stalks, and it rather surprised me to find (although the ground around was perfectly dry) a wet spot, just as if I had taken a wine-glass of water and thrown around the base of the plant previous to drawing it up; and the inference, or conclusion, I came to was this—that it was the exudation of the stalk in a state of decomposition. I followed this up for several successive days, and found the Potato nearest the haulm was affected, and, apparently, from that very exudation, the poisonous matter thus impregnating, slowly, but surely, following the fibres or strings to the whole nest.

Now, I have heard of medical men using the knife, or of veterinary surgeons dissecting a dead animal in a state of mortification, losing a limb, and even life itself, by a cut or small wound coming in contact with any portion of the matter in a state of putrefaction;—and why may not this be the case with regard to the exudation from the Potato stalk? If I am right in my conjectures, this, surely, must account for the preservation of the root by taking up the stalks immediately on the discovery of their being struck.

Not having seen, in the different publications of the day, anything approaching to the views here taken of the Potato murrain, and in the hopes it may call the attention of scientific men more immediately to the subject, is the inducement for sending you those few remarks.—AN OLD ASHBURTONIAN.

I HAVE seen an observation, that by leaving Potatoes in the ground to self-sow themselves you avoid or mitigate the Potato disease. I do not think so; neither from what I collect, nor from my own experience.

My predecessor, when the Potato disease had first made its appearance, ploughed up a fine old turf orchard of about two acres, thinking to be able almost to pay for the land by the abundance of his anticipated Potato crop. A fine crop showed itself of the Potatoes which we call here "the Farmer's Glory," but they all went rotten, and were boiled for the pigs.

I believe the land lay idle all that winter, and at Lady-day I entered. In the summer, a quantity of self-sown Potatoes grew up, healthy and vigorous, and they came up so regular and well that I determined to hoe and weed them, and to gather the crop. Beautiful-looking Potatoes I got up, but they almost immediately became diseased, and I boiled them for my pigs. Since then I have found it cheaper to buy Potatoes as I want them than to grow them. I gave a small patch of the same land up to my man-servant, and he, at my suggestion, about the middle of the November, took my horse and cart, and fetched two large tubs full of the ammoniacal liquor from the neighbouring gas-works, and dug it fresh into this patch of ground.

The ground lay the winter, and was turned once before

planting. The next crop of Potatoes was free from disease, although I think it was a little over dosed; for gas liquor requires to lie mixed with the soil before the application to it of roots or seeds. I throw out this experience for useful discussion.—A WORCESTERSHIRE MAN.

TO CORRESPONDENTS.

. We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

PROPAGATING-HOUSE SITE (Waterford).—This will be useful, though much in the shade, provided you can move plants from it as soon as struck, otherwise they will get weak and drawn. We should prefer a house standing east and west, and power of shading when necessary.

PLANT-STOVE SITE (Ibid).—This has a span roof; direction of house north and south. Hartley's patent glass would save shading. A wooden tank covered with slate, in addition to iron pipes, would not be indispensable, but would furnish a nice means for giving bottom-heat when required. There need be no extra moisture from it in winter, if the slates are bedded down close with red lead. Moveable pieces would give you a moist atmosphere when necessary.

HEATH PROPAGATION (Ibid).—Articles on propagating by seed will be found in No. 167, and on propagating by cuttings in Nos. 168 and 169. By attending to the minutiae there described, you may study, or not study, old authorities, as you have opportunity. We know the importance of catering for new subscribers; but if we repeat similar articles on the same subjects often, then our old subscribers say, "the old tale over again." It is not so easy to please the public as many of our good friends imagine.

PROTECTING MATERIAL (L. J. G.).—We quite agree in all that you have said about nets, loose straw, &c.; but we could not pass an opinion upon the material you have invented, nor the quantity likely to be wanted, until we had seen it and tried it, and perhaps not even then. We will, however, ventilate the matter for you, which, you say, "is a non-conductor of heat, waterproof, will last for years, and quite as useful as wooden shutters, and could be made in large quantities at one penny per foot; could be made to fasten on lights, so that no wind should blow them off, at 1½d. per foot; could be made to cover forcing houses, vine borders, walls, &c., at 1½d. per foot. Who would not insure a crop of wall-fruit for a cost of less than one farthing per foot per year?" We know little about patents, but enough to deter rather than allure; but if this material could be proved to suit so many purposes, and was demonstrated to be superior in price, endurance, and applicability, to anything and everything else, the inventor and manufacturer might laugh at patents, for their first and superior chance would be remunerative. Mind, all these requisites must be present.

APPLE FOR HOUSE WITH SOUTH-EAST ASPECT (J. S.).—No doubt the *Hawwell Sauring* would suit, and what fine specimens you might have of the *Ribston Pippin*.

OXALIS BOWELL (Ibid).—Having only a pit and greenhouse, and these bulbs beginning to spring, you must keep them dry and as cool as you can, to be free from frost until about April; then water, and let them grow on, and they will bloom in May and June, and onwards. If you grow them now you would not have sun enough to keep the blossoms open.

GLADIOLUS SEEDLINGS (Ibid).—These are quite green yet. Allow them to decay gradually, by keeping them a little dry; if they keep green till spring, grow them on, and they will most likely fade and rest early in autumn. From the faded state of the flower sent we could not determine its kind; it seemed a variety of *floribunda*.

HOW TO CUT VINES PLANTED LAST SEASON (A Young Beginner).—Cut within a few buds of the bottom of the rafter, as, if as strong as they are long (sixteen feet), you may take a bunch or two next season.

RUBBLE ROUND HOT-WATER PIPES (W. K. H.).—Will you enlighten us as to the materials, good conductors, and retainers of heat, you have found quite changed in their properties when placed contiguous and over water-pipes for bottom-heat? Of the materials you mention, we would prefer brick-bats, rough gravel, washed clean, or lumpy sandstone; but our experience never warranted us in supposing that one of these would act just antipodes to the other. We should banish all small matter like coal ashes.

FUCHSIA CORDATA (S.).—If it is fresh and growing, and has not flowered, keep it in the house, and curtail water a little, and you will probably have bloom early in 1854, if not before. If it has bloomed in summer, and the leaves have fallen, treat it as another Fuchsia. Plants to bloom in winter may be managed as mentioned the other week for *serratifolia*.

VARIOUS (T. Town).—1. Everything you mention in your first list will be best in your greenhouse. 2. Lose not a moment in moving your *Ericas* and *Epacris* into such house from the shady frame at the end of the garden, or you will have the risk of getting mildew among them to a certainty. Plenty of air is the preventive, and this you can always command where there is fire-heat. 3. Place in that frame your *Carnations*, *Auriculas*, and *Polyanthus*, and *Fuchsias*, if small and dormant. 4. In the pit at the end of the greenhouse, into which heated air can be admitted, keep *Cinerarias*, *Calceolarias*, *Petunias*, *Verbenas*, *Daphnes*, &c. If the first are wanted early they must be set in the greenhouse. If you practice what is said to-day, and elsewhere, about *Calceolarias*, you will have no difficulty. 5. To grow in such a house, you must keep *Glaxias* dry, dormant, and in a warm part of the house until the first of May. 6. Eschew sea-sand and lime, unless as chalk, from greenhouse compost; you must learn that what would suit a Fuchsia would kill an

Erica. 7. Use manure-water weak; what you mention, if at all fresh, or left long in the water, is five times too strong. 8. *When to give air in winter.*—Regulate that more by the outside than the inside temperature. See article last week. 9. "At what degree should I light fires?" Alas! there is no mathematical rule in these matters; you must take sun, clouds, clear sky, the direction of the wind, the indications of a thermometer in the shade, all as guides if you wish to be saving. A house might be at 50° with sun-heat at three o'clock; but, in a keen northerly wind, if you did not light a fire until your house fell to 38° or 35°, we have seen nights when John Frost would have stuck damp plants to the shelves before your furnace would have told.

VARIOUS (I. I. E.).—You will find in the present and last number much that will suit your case. Though not possessing the issue for the last twelve months, yet, by turning to the index of the volumes we presume you do possess, you will find information upon everything you want. With every desire to oblige, we think our readers should exhaust the stores at their command by consulting indexes for themselves, instead of asking us to do it for them. Much of your want of success, notwithstanding your zeal, is owing to your window having so little sunlight. Your dry cellar will enable you to save such things as *Fuchsias* and *Scarlet Geraniums*; but beware that in rotting your vegetable refuse in your damp cellar you do not create a cholera nuisance. Do not let the soil in your Geranium and *Fuchsia* pots get quite dry. The best time for propagating all you mention would be April or May; but, with your means, it would be folly to trouble yourself with Heath propagation. If you keep your *Myrtle cuttings* alive they will, perhaps, root in spring. The *Oleander* would have done better with you if you had inserted the cutting in a bottle of water and set it on your chimney-piece. Your Rose will get more vigorous next spring. As touching it, and *Azaleas* and *Camellias*, see an article last week. You must keep the frost out of your parlour. You have done quite right with your bulbs. Let them remain where they are covered up until the pots are crammed with roots. *Bulbs*, *Fuchsias*, *Geraniums*, and such hardy things, would suit your circumstances best.

WHITE GAME FOWL (Q. Q. Q.).—In colour only would the points of a good white Game fowl differ from what is required in the other varieties of that breed. The head of the cock should be thin and long; face bright red; beak strong and curved; eyes prominent; neck long and full; breast broad; back short and flat between the shoulders; body tapering towards the tail; wings inclined to expand and cover the thighs, which are short and muscular; shank of the leg powerful, and long in proportion to the thigh; legs well forward, with a clean flat foot, and strong claws, the spur being low on the leg; feather close and hard; carriage erect and confident. The characteristics of the hen are those of the male bird, with the usual feminine reductions. *Bantams* are in No. 5 of THE POULTRY BOOK.—W.

GUINEA FOWL (P. S. H.).—The points of the Guinea fowl were alluded to in a recent query. In proportion to the less frequent exhibition of these birds than other fowls, the standard of excellence may not have been so positively determined on; but uniformity of markings and colour generally, shortness on the legs, depth of body, and weight, are many points by which judges are guided.—W.

HOW LATE CAN EVERGREENS BE PLANTED (J. J.).—Every plant you mention has been planted and transplanted by the hand which writes this, over and over again, in every week in the year. In a very cold, late spring, April is the worst time, and frosty weather, in December, the next worst time, to transplant. When the autumn is cool and moist, from August to October is the best time to move all evergreens. That was the time chosen by our great-grandfathers, and by their fathers before them, to transplant their evergreens, as we shall prove some of these days, from the "log" of a dealer of those times. In your case, if you get your trees and shrubs in by the end of February you are safe enough. A head gardener from Scotland is the most "economical," if his own head is put on the right way, otherwise he is what he is, and an English or Irish gardener is no more. We never interfere in this department, and we cannot say where is the best place to apply to.

BODDED ROSES (M. C. E.).—A lady wishes to ask if other ladies, who have budded Roses this season, found them slow in moving, that is, do the buds generally remain dormant. Her own buds look fresh and healthy, but they did not start in growth; she took off the tyings, and wishes to know if that is a safe way. In such a season as this, it is most fortunate that the rose-buds did not start, as they, or the shoots from them, would be so green and soft that frost would be sure to hurt them. As to their taking harm as they are, that depends upon the sorts. A bud once "taken" will be just as safe on the wilding as it would be on its own mother branch, or very nearly so; therefore, a very hard winter will never hurt dormant buds of hardy Roses, or of other hardy plants.

TREE PÆONIES (Ibid.).—Early in the spring is the best time to head down Tree Pæonies, and Apple Trees, and many other trees; and when that is done, we cannot expect flowers or fruit that same season. To be sure, a Tree Pæony might be cut back after flowering in May; but then, unless the season and the part of the country were very favourable to ripen flower-buds before the end of the season, there would be no flowers next year, so that the question of cutting Tree Pæonies before or after flowering is "as broad as it is long," as country people say.

DIPLYTRA SPECTABILIS (Ibid.).—The leaves and stems of this plant ought to be so ripe by the end of October that you might cut them off when you dressed the border; the roots are quite hardy; but in case the winter turns out very hard, and your plant is very young, a little protection will not hurt it, and may save it from being hurt—place a pot over it.

ROSE POLES (M. E. G.).—Our correspondent wishes "to have ten Larch poles, fifteen feet high, with Roses over them." Some of the Roses he wishes "to be fragrant, and others fast growers," therefore he must have *Noisette* and *Evergreen Climbers* for "fast growers," very strong *Hybrid Perpetuals* for fragrance, and to keep a constant succession of flowers, and, if possible, to form the body of the pillars some years hence, he must also have, for this style of pillar, two or three kinds that are sure to keep the bottom full, and to flower down to the ground. When one begins gardening late in life, or when one wishes to

anticipate the result of ten years in advance, this is a very good way of going to work. The question, therefore, may be considered as of universal or public importance, and is answered accordingly. Seven kinds of strong summer climbers, and three kinds of *Noisettes*, will make one "fast grower" for each pole. The best ten would make *perpetuals*, and we only recommend for bottom the *Gloire de Rosamère* and *Geant des Batailles*; the former must be on its own roots, or else it will do no good; the *Geant* would also be better on its own roots; but very low-worked plants will do. The Hybrid *Perpetuals* ought to be standards and dwarfs,—say ten of the very tallest and strongest standards one can buy, and ten strong dwarf plants, on their own roots, or worked very low, of the same kind as the standard, or any favourite kinds. For seven best summer Climbing Roses, take *Felicite perpetuelle*, *Princess Maria*, *Marianthes*, *Rampant*, *Ruga*, and *Laura Davoust*. For three best pillar Roses, take the old *La Marque* and *La Biche*, two of the best pillar *Noisettes*, though old; and for the third, we would choose *Jaune Desprez*. If you want experiments, try *Cloth of Gold*, *Solfaterre*, and *Fellenberg*, or else *Fortune's Yellow* instead. For standard *perpetuals*, take *Madame Luffay*, *Mrs. Elliot*, *William Jesse*, *Baron Prepot*, *Plus the Ninth*, *Standard of Morengo* (plant this with *Rampant*), *Duchess of Sutherland*, *Countess du Châtel*, *Pierre de St. Cyr*, and *Coupe d'Hebe*. All these are among the very best Roses known, but there are many more just as good, so there is a great choice in all classes of Roses. *Blairii No. 2*, *Auguste Mie*, the *Malmaison*, *Bouquet de Flore*, *Compte de Montelivet*, *Queen of Perpetuals*, *Queen Victoria*, and scores, are fully as good as those we have named; but we would always plant our own ground with the very kinds we recommend.

A DIFFICULTY (Zealous Subscriber).—It is perfectly impossible to be aware of what would suit you from the data given. A magician could hardly tell "the best hardy trees and shrubs to plant a spot," and this "spot" is now planted with Willows, with a "stream running through it," and there "was a pond there last autumn." If the "spot" is swampy, Willows, Poplars, and Alders, are the best trees for it, and *Magnolias*, of sorts, would be the best shrubs. But what kind of soil is it? What is the intention of planting it? Is it to hide out anything, or with a view to profit, or what? Is it in the middle of a forest, or in the bottom of a naked valley? or near a garden, or farm, or where? What is the force of the "stream;" and how is it supplied, seeing the old pond is no more?

INSECTS (T. M. W.).—The insects found in your vase, in which you fed some caterpillars with leaves and grass, are the larvae of a fly (*Anthomyia conicularis*), very like the common house-fly. They are found in water and moist places, and occasionally get into the human stomach, where they cause disease.—W.

W. ADAMS (C.).—Thankfully received.

FEATHERS (S. Y.).—It is very likely they are Grey Shantches, as you say the parents came from China; but it is as impossible to give a decided opinion from an inspection of a few feathers, as it would be to draw a lady's portrait from a lock of her hair. *Pear Trees* grafted on Quince stocks usually will produce cracked fruit, or be otherwise defective on a dry soil.

REIGATE POULTRY SHOW.—We are informed that Mr. Bridges of Croydon's *Partridge Cochins* China fowls took a first prize, and not a second, as stated.

PULLETS EGGS (T. P. M.).—Of valuable birds, we have had the very first eggs hatched and with good results, but usually we reject about the first half-dozen. The contents of the slop-pail require to be diluted very much before used as liquid-manure. It is only advantageous during the growing season.

ROVEN DUCKS (E. Y. P.).—Mr. Punchard's direction is "Blunt's Hall, Haverhill, Suffolk."

GUTTA PERCHA BEE-HIVES (Honey Bee).—It might be adopted as a cover to exclude wet, but would warp too much, we think, if employed in forming the hive itself. We know of no rock plants that are specially good bee-flowers.

IS GLASS POROUS? (Municeps).—All bodies are porous, therefore glass is so, but we do not know which kind of glass is most so.

CHICORY SEED (A Country Curate).—We cannot say where "the best" can be procured. We should apply to a wholesale agricultural seedsman.

SOAP BOILERS' WASTE (J. B. H.).—It has been used on heavy soils, on peat moss, and on cold wet pastures. Twenty waggon loads per acre, have been used, with great advantage, on the last-named.

NAMES OF PLANTS (J. H. L.).—1. *Cryptomeria japonica*; 2. *Abies Douglasii*; 3. *Pinus insignis*; 4. *Abies Smithiana*, or *Morinda*; 5. *Abies*, uncertain which; 6. *Abies balsamia*; 7. *Juniperus prostrata*; 8. *Pinus excelsa*; 9. *Juniperus*, species? 10. *Juniperus*, sp. uncertain; 11. *Juniperus suecica*; 12. *Abies*, uncertain; 13. *Cupressus torulosa*. Some of the bits were too small for us to be certain as to the species. (F. M. E.).—Specimen imperfect; probably *Aspidium cristatum*. (Rev. R. M. E.). The yellow flower, *Colutea Paeocoki* (?). The other shrub, *Leycesteria formosa*.

OLD HOLLY-TREE (Clericus).—Please to wait a short time, and we shall put you in the right way with this tree; there is no hurry about it just now, and we are only waiting to procure dates about a case of the sort that has been cured, to our own knowledge, for we have seen the subject lately.

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WEEKLY CALENDAR.

M D	D W	DECEMBER 8—14, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometcr.	Thermo.	Wind.	Rain in Inches.						
8	TH	Skylarks flock.	29.298—29.241	49—37	S.W.	08	55 a 7	49 a. 3	morn.	8	7 48	342
9	F	Red-throated Diver comes.	29.613—29.525	53—45	S.W.	01	56	49	1 1	9	7 21	343
10	S	Wild Swan comes.	29.583—29.537	54—49	S.	03	57	49	2 12	10	6 54	344
11	SUN	3 SUNDAY IN ADVENT.	29.595—29.519	57—48	S.W.	—	58	49	3 23	11	6 26	345
12	M	Moles throw up hills.	29.501—29.429	54—40	S.	20	59	49	4 33	12	5 58	346
13	TU		29.473—29.388	54—43	S.	12	VIII	49	5 43	13	5 29	347
14	W	EMBER WEEK.	29.364—29.335	55—42	S.W.	25	1	49	6 51	14	5 1	348

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 46.6° and 33.8° respectively. The greatest heat, 61°, occurred on the 13th in 1842; and the lowest cold, 11°, on the 13th in 1846. During the period 114 days were fine, and on 68 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 113.)

ARABIS STRICTA; Bristol or St. Vincent's Rock Cress.



Description.—It is a perennial. Root simply tufted, very

long, tapering and fibrous, not creeping, certainly perennial. Stems for the most part several, erect, or ascending, from three to six inches high, cylindrical, leafy; the central one usually branched; all rough in the lower part with mostly simple, spreading, bristly hairs. Radical-leaves numerous, blunt, dark green, purplish underneath, deeply toothed or sinuated in a lyrate manner, rough with simple, rarely forked, stiff, white hairs; stem-leaves scattered, smaller, and more entire, coarsely and sparingly fringed. Flowers few, in a flat cluster, erect, rather large, their petals cream-coloured, upright. Calyx smooth, reddish, scarcely if at all spreading. Pods slender, erect, straight, smooth, slightly wrinkled, on short smooth stalks, of which some of the lowermost are accompanied by small line-like leaves, looking like bracteas, but not properly such. Glands in a ring round the base of the stamens.

Time of flowering.—May.

Places where found.—Lime-stone rocks in the south-western part of England.

History.—It was first discovered in this country by Ray, and was considered by him as a dwarf *Cardamine*, or Cuckoo Flower, "with Daisy leaves." It was found at Bristol, about St. Vincent's Rocks, by Mr. W. Clayfield, and thence has received its common name. Its specific name, *stricta*, alludes to the straightness of its flower-stems. (Smith. *Withering*.) It is the *Arabis hispida* or Rough Wall-Cress of Linnæus. — (Martyn's *Miller's Diet*.)

It is not usual with us to refer editorially to any of the subjects discussed by our departmental writers, but we must make an exception to-day, for the purpose of directing especial attention to Mr. Beaton's observations upon the renovation of old trees.

This is a subject so interesting, both in a physiological and domestic point of view, that it will readily obtain an excuse for us from our readers. Very few are those who have long resided in the country who have not become attached to some tree, and grown the fonder of it as decay threatened its destruction. Trees, in their old age, acquire that size and irregularity of form, gaining for their picturesqueness the descriptive title of "Painters' trees;"—it is a beauty totally distinct from the beauty of vigorous growth; and if once lost by the destruction of the trees is never to be replaced until one or two generations of our descendants have found their graves. To preserve such features about our

grounds—to retain these "ancestral trees"—is, consequently, an object most desired. We rejoice, therefore, that Mr. Appleby has just commenced a series of papers upon preserving forest trees in vigour, whilst Mr. Beaton has furnished us with information how to sustain and rescue them when decaying.

We have said that the subject is of interest to physiologists also, and it is especially so, because there has long been a division of opinion among them upon the longevity of trees. Some consider that trees have a prescribed period of duration; but others think that by grafting, and other devices, some trees may be rendered, to an indefinite extent, an exception to that decree of death which extends over all other organised beings.

To the latter opinion we cannot give our unqualified assent. We know that the Golden Pippin has been quoted as evidence sustaining that opinion, but there is no proof of that Apple being mentioned before the time

of Evelyn; and two centuries, or even double that number of years, may be readily allowed for an Apple-tree's probable life-time. This meets the inference drawn by Mr. Hogg from the fact, that "In the Brompton Park Nursery, where the same Golden Pippin has been cultivated for nearly two centuries, and continued from year to year by grafts taken from young trees in the nursery quarters, there is not the least disposition to disease, canker, or decay of any kind; but, on the contrary, a free, vigorous, and healthy growth." (*British Pomology*, 97.)

Grafting may postpone the arrival of death, just as the transfusion of blood will revive a sinking animal; but we cannot reasonably conclude that the postponement can be for a time indefinite. The day must come, we think, both to the animal and the scion, when its vessels shall be without the power of propelling or assimilating the vital fluid.

We make these observations only to warn our readers from expecting too much, but in no degree to depreciate the essays to which we allude. On the contrary, we prize them highly, for they have as their common object the preservation of old friends to a still more vigorous and greater age. Like Rousseau, we dislike to have an old post removed with which we have been long acquainted—much more do we shrink from the taking away of a tree that is an old acquaintance; and we are grateful to any one who aids us to preserve it. Fully do we enter into the spirit of him who recently wrote as follows:—"Many thanks for sparing that old tree. Whenever I think of my earliest home, that tree, with its huge excrescences and widely outspread limbs—even the very colour of its bark—rise vividly to my memory. I was beneath and about that tree during the first twenty years of my life—the freshest and the happiest. My first love was told beneath that tree, and my first dog was buried beneath it. When I think of my mother, father, brothers, and sisters, in early days, there is always some event connects them with that old tree. Glad—grateful—am I, then, that it is spared; for I should miss its trunk and limbs almost as much as the faces I shall never again see beneath them, and the voices I shall hear no more."

No one can have attentively visited a succession of Poultry Exhibitions without noticing a considerable diversity, and even irreconcilability, in the decisions of different judges. We have so often observed this, though we knew that the judges in each case were men of honour, and gave their decisions honestly and carefully, that we have long considered over the question—Cannot a code of Rules be devised that shall insure a greater uniformity in the decisions, and leave less to the uncertainty of individual taste and judgment?

We had taken some steps towards securing an object so desirable, and we are again roused to the subject by the following letter:—

"In looking over your valuable work, *THE COTTAGE GARDENER*, I find many of your readers puzzled much at

the decision of the judges at various shows, some holding out that dealers should not be chosen for judges, and some, no doubt, thinking them the most fit persons to fulfil this important office. For my own part, I will not find fault with the judges, but with the system as at present carried out. Only think of choosing a man to judge poultry, no matter whether he be dealer or not, and having no laws made to guide him in his judgment! How is it possible that a man can do justice either to himself or to the exhibitor under such conditions? Why not, at once, take pattern by the old *Clubs* of Lancashire, that have been in existence for so many years, and make laws for all classes of poultry, similar to those they have for the fowl they show? It is only reasonable to make the laws first, and then to choose the judges; place the laws in their hands, and say, "Judge these fowls by these laws." Then, and not till then, will the exhibitor have justice done him. At the same time, the judge will be placed in a very different position; for having such laws, he must be guided by them, and not be called upon to judge fowl such as he has, perhaps, never seen before, and merely according to his own taste.

"I here enclose you a copy of the old Lancashire laws, as you may think them worthy of publishing in *THE COTTAGE GARDENER*. They give the old names of the fowl, but I have added the names they are shown under at the new Exhibitions.

"If these laws had been in existence, I should have had no cause to complain. I will here point you out my case of complaint. At our Birmingham Show, last year, I sent four pens of Gold Spangled Hamburgs, and they were thrown on one side as mere rubbish. These fowls, after being brought home, were thought very much of by parties who saw them at the show; and, in a little time, my son sold to Mr. Adkins some of the hens that had been so unnoticed at the Birmingham Show, and Mr. Adkins sent them to the London Summer Show, and there he took a first prize with them. I find, also, the following, in your remarks on that show, in your August Number, page 346:—"The Hamburgs, as a whole, were inferior, with the exception of the Golden Spangled Hamburgs. The birds which took the first prize belonged to Mr. Adkins, and were *eminently rich in their colour and markings*." Here, then, is a clear case, showing the necessity of an alteration of the system of judging, for the fowls did not alter at all, having the same feathers on them at both shows, as they had moulted off before the Birmingham Show.—JOHN BROWN, *Globe Wine Vaults, Great Hampton Street, Birmingham*."

The Lancashire Rules, alluded to by Mr. Brown, are inserted in *The Poultry Book*, but we here republish them.

RED MOONED PHEASANTS (*Golden Spangled Hamburg*).

- | POINTS. | MARKS ON FEATHERS, &c., CONSIDERED BEST. |
|---|---|
| 1st, Comb.— | Best double, best square, the most erect, and most piked behind. |
| 2nd, Ears.— | The largest white. |
| 3rd, Neck.— | The best streaked with green black in the middle of the feathers, and best fringed with gold at the edges. |
| 4th, Breast.— | The largest moons, brightest and best green black, most free from being tipped with white or red at the end of the moon, and the clearest and best red from the moon to the bottom colour. |
| 5th, Back.— | The largest moons, brightest and best green black, least tipped with white or red at the edges of the moon, and the best and clearest red from the moon to the bottom colour. |
| 6th, Rump.— | The largest moons, brightest and best green black, least tipped with white or red at the edges of the moon, and the best and clearest red from the moon to the bottom colour. |
| 7th, Wing (divided into four parts). 1st, <i>Bar</i> .— | Best and brightest green black, and best and clearest red. 2nd, <i>Bars</i> .—To have two distinct bars, composed of the largest, clearest, brightest, and best green black moons, and the clearest and best red from the moon to the bottom colour. 3rd, <i>Flight</i> .—The clearest and best red. 4th, <i>The Lacing, or top of the Wing, above the flight</i> .—Largest, clearest, brightest, and best green black spots on the end of the feather, and the best and clearest red from the spot to the bottom colour. |
| 8th, Tail.— | The brightest, darkest, and best green black. To be full feathered. |
| 9th, Legs.— | Clearlest and best blue. |
| 10th, General Appearance.— | The best feathered hen. |

SILVER PHEASANTS (*Silver Spangled Hamburg*).

POINTS.	MARKS ON FEATHERS, &c., CONSIDERED BEST.
1st, Comb.—Best double, best square, most erect, and best piked behind.	
2nd, Ears.—Largest and best white.	
3rd, Neck.—Best streaked, with green black in the middle of the feather, and best silvered at the edges of the feather.	
4th, Breast.—Largest moons, brightest and best green black, most free from being tipped with white at the edge of the moon, and the best silvered from the moon to the bottom of the feather.	
5th, Back.—Largest moons, brightest and best green black, least tipped with white at the end of the feather, and clearest and best silvered from the moon to the bottom of the feather.	
6th, Rump.—Largest moons, brightest and best green black, least tipped with white at the end of the feather, and the clearest and best silvered from the moon to the bottom of the feather.	
7th, Wing (divided into four parts). 1. <i>Bow</i> .—Best and brightest green black, and best silvered. 2. <i>Bars</i> .—To have two distinct bars, composed of the largest, clearest, brightest, and best green black moons, and best silvered from the moon to the bottom of the feather. 3. <i>Flight</i> .—Best and clearest silvered. 4. <i>Lacing, or top of the wing, above the flight</i> .—Largest, clearest, best, and brightest green black spots on the end of the feather, and best silvered from the spot to the bottom of the feather.	
8th, Tail.—The brightest, darkest, and best green black. To be full feathered.	
9th, Legs.—Clearest and best blue.	
10th, General Appearance.—The best feathered hen.	

BLACK PHEASANTS (*No new name at present*).

POINTS.	MARKS ON FEATHERS, &c., CONSIDERED BEST.
1st, Comb.—Best double, best square, most erect, and best piked behind.	
2nd, Ears.—Largest and best white.	
3rd, Colour.—The best and richest glossed green black.	
4th, Legs.—Best and clearest blue.	
5th, General appearance.—Best feathered hen.	

CREELS (*Silver Pencilled Hamburgs*).

POINTS.	MARKS ON FEATHERS, &c., CONSIDERED BEST.
1st, Comb.—Best double comb, best square, most erect, and the best piked on the top and behind.	
2nd, Ears.—Largest and best white.	
3rd, Neck.—Clearest and best white.	
4th, Breast.—Largest, clearest, and best white.	
5th, Back.—Largest and best clear green black spots on the end of the feather, and the clearest white ground.	
6th, Rump.—Largest and best clear green black spot on the end of the feather, and clearest white ground.	
7th, Wing (divided into four parts). 1. <i>Bow</i> .—Largest and best clear green black spot on the end of the feather, and the clearest white ground. 2. <i>Bars</i> .—Largest and best clear green black spot on the end of the feather, and the clearest white ground. 3. <i>Flight</i> .—Clearest and best white. 4. <i>Lacing, or top of the wing, above the flight</i> .—Largest and best clear green black spots on the end of the feather, and the clearest white ground.	
8th, Tail.—Best clear green black creeled tail.	
9th, Legs.—Clearest and best blue legs.	
10th, General Appearance.—Best feathered hen.	

To the foregoing communication, and to the subject generally, we ask the serious attention of all judges of Poultry. We have not yet been able to come to a positive opinion as to the details of the desirable standards of merit for the guidance of judges at our Poultry Exhibitions, but we incline to think that those standards should be on a plan allied to that by which the merits of cattle at the Shows in the Channel Islands are determined. The following is their plan:—

SCALE FOR EXAMINING BULLS.

	POINTS.
1.— <i>Race</i> of both parents acknowledged to have been superior - - - - -	4
2.— <i>Head</i> handsome and fine; cheek small; muzzle small, and compassed round with white; nostril large and dilated; horns smooth, a little curved, and tipped with black, not very thick at the base; ears small, and orange-coloured inside; eye lively and large - - - - -	8
3.— <i>Neck</i> fine, and well-placed upon the shoulders; <i>breast</i> large; <i>body</i> round and deep, with the ribs rounded well-up to the haunches - - - - -	3
4.— <i>Back</i> straight from the shoulders to the tail, forming a right angle with the tail; <i>tail</i> fine - - - - -	3
5.— <i>Hide</i> fine and loose, well-covered with fine, soft hair, and of an approved colour - - - - -	3

	POINTS.
6.— <i>Fore-legs</i> straight, short, fine and strong, large above the knee, and fine beneath it - - - - -	2
7.— <i>Hind-quarters</i> , from the hough to the back, long and well filled-up with flesh. The legs ought not to cross behind when walking - - - - -	2
8.—Symmetry - - - - -	2
9.—Condition, or general appearance - - - - -	1
	28

No prize to be awarded to a Bull having less than twenty points.

The principle on which this code of rules is formed, seems, with certain modifications, generally applicable to our present wants. Judges, it may be certain, no less than exhibitors, will gladly welcome such an arrangement, and in every respect would it be advantageous to those who may take an interest in poultry matters, without themselves occupying either of the above positions.

At the same time it must not be concealed that the difficulties in the way of carrying-out such a measure are considerable; and, probably, it would be agreed, that it has hitherto been wisely deferred, since each of the last few years has added so greatly to our knowledge of the properties, merits, and characteristics of the several breeds, that constant changes would, in most instances, have been required. In our present position, however, there seems no reason why the combined judgment of practical men should not be brought to bear upon this subject, and it shall not be neglected.

A most liberal prize-list has been issued for a Poultry Show, to be held at *Shrewsbury*, on the 8th and 9th of this month; and the name of Viscount Hill, as President, guarantees due attention to the requirements of both exhibitors and the public generally. The classes, with a single exception, follow the usual routine, but that for "birds of any other distinct breed," has been excluded. We regret this, as however unwilling to dignify with that designation many of the birds that claim that title, the policy of such a class cannot be questioned, when it offers the only means of admission to many varieties that possess merit, not only as regards their appearance, but also in an economical point of view. It is, also, the only field in which their alleged good qualities can be satisfactorily tested, and then it usually becomes by no means the least attractive portion of the Exhibition. The Andalusians, and many of the Polish varieties, with the Parmingans, and other novelties, on which the public would gladly gain further information, must by this rule be necessarily excluded.

EARLY POTATOES IN FRAMES.

I FEEL that this is rather a grave subject to handle, as times go, for we have all seen the very best practice rendered nugatory, during the last few years, through the devastating powers of the murrain. Nevertheless, we must not utterly despair, nor stand with folded arms, whilst any chance remains of restoring this invaluable root to its pristine powers. It is a fact worthy

of pointed remark, that our early kinds in hotbeds, or frames, have not suffered in anything like a ratio corresponding with that of the late crops in the fields. This I take for admitted on all sides; and if so, to what does it seem to point? Why, to the fact, that early planting, early rest, and a very moderate amount of hault, are favourable to Potato-culture in the present state of affairs.

Before offering a little advice about early Potatoes, let me advert to a singular fact in out-door culture which has come to my knowledge somewhat recently. Within two miles of here, there are, perhaps, as many Potatoes grown, for the amount of land, as in any part of England. Indeed, for more than thirty years the culture of Potatoes has constituted the key to their rotations on the lighter soils; and in this respect, the Potato here has become a sad rival of the dairy, causing many broad acres of old cheese pasture to be broken-up, and, of course, weakened by culture. Whether wrong or right, on the whole, I pretend not to judge; I merely speak as to the fact, and as one bearing on the cheese-making, for we are here about in the very centre of the old Cheshire dairy district.

About seven years since, a certain person, who had been, I believe, a shoe-maker, took a considerable extent of land, which had been, what is termed here, "*ploughed-out*," that is to say, fairly exhausted by hard cropping and bad manuring. People thought he was mad; but he went boldly to work in the Potato way, planting most of this poor land with that crop; and as, of course, he had no manure, and the land would scarcely grow a Daisy without some application, he was driven to try guano, and the fact is, he has gone on annually increasing the breadth of Potatoes, until, it would appear, that what little alternations of crops he has bear a direct reference to this Potato and guano system. He is now said to have amassed much property, and everybody is talking about Mr. B's wheat stacks, and his thousands of bushels of Potatoes, when other folks have few or none.

Now I, for one, must confess to having learned from the shoemaker's practice; and my opinion may be embodied in the two following maxims:—

1st. Potatoes, when above ground, should be so situated as to be a full-grown plant speedily.

2ndly. To effect this, the manure used should be highly stimulating, but the first stimulus should soon pass away.

Indeed, these results were to be expected from guano beforehand, and gardeners have yet much to examine into concerning the difference between a slow-acting manure long-continued, and a quick and highly-stimulating one soon declining.

But it is not only in the Mr. B's case, before alluded to, but I have heard of many others tending to the same point; and I will venture to say, that if some of our readers will try two plots of exhausted soil, equal in condition and character, the one with guano, the other with farm-yard manure, that they will find, as to Potatoes, the superiority of the former.

It is well known that the decay of the haulm presents different appearances under differing conditions; in one case assuming the condition called wet rot, or gangrene; in the other, a dry gangrene. Now I have noticed, for years, that the dry gangrene in the haulm is a mere consequence of poverty in the soil; and the evil of luxuriance of plants through highly-stimulating manures. And so on, through intermediate characters of soil, producing, as might be expected, intermediate effects.

But now to the chief purport of this paper—which is to offer a few hints to the inexperienced in the principles of forcing, or accelerating, Potatoes.

There is no better Potato, for early forcing, than the *Ash-leaved Kidney*, if true (this is the *Walnut-leaved*

Kidney of some districts), for there are several mongrel kinds in culture. Most gardeners force an early frame, or pit; some, several; and most resort to fermenting materials in such forcing. Whatever the bed may be composed of, in this respect, it must be made to produce a bottom-heat of 65° to 70°, and should be capable of retaining it for several weeks, which is generally effected by what are termed linings. The fermenting material should be trodden carefully in the process of filling, or building, as the Potatoes do not thrive so well if the soil settles; their fibres become broken, and their foliage disarranged. The best soil for the *Ash-leaved Kidney* Potato is a turfy and somewhat adhesive loam; but loam, or no loam, they love a sound soil—one not too sandy.

The other classes of Potatoes will succeed in lighter soil, and, in fact, any of them will do very well in a good garden soil; but by no means add manurial matters, unless a little guano were considered necessary, when the best way would be to blend it with the soil thoroughly. A gallon of Peruvian would be enough for an ordinary frame or pit. And now let us advise our young Potato-forcers to start all their earliest frame Potatoes in pots—those five inches diameter are the best; and they may be potted in soil both strong and rich, on the principle of giving things a good start. Almost any frame or greenhouse will do for them, but the lower the temperature, the earlier they should be potted. If in an ordinary cool house, or frame, minus frost, and the cultivator desires Potatoes in March, there is not a day to be lost; indeed, they should have been potted a month ago. The best plan is to put the Potato in the bottom of the pot, or nearly so, and then to fill-up with the rich compost: when the plant has to be turned out in the bed there will be found such a mass of fibres as will, in a generous soil, and a little bottom-warmth, cause the plant to develop speedily, which, as before stated, is the chief object in these days.

About the third week in January is a capital time to make the bed and plant them out finally, and a little management is requisite in this proceeding. The fermenting material being all right, our practice is to strew a layer of old turfy soil over it, and on that layer the kidney's turned-out of pots, with, of course, nice white balls, and a well-established sprout; these are then placed in rows, about fourteen inches apart, and at the distance of some seven to eight inches between the plants.

Henceforward, the Potato-forcer's chief aim is to keep them from "drawing"—they require a bottom-warmth under such circumstances, if only to repel frost; and yet, again, for another reason, the root-action must be sustained. Ventilation on every favourable opportunity is the pivot on which the chances of success must be founded. If this be well attended, and previous conditions have received the attention recommended, why all will be right.

But, no sooner are the Potatoes three inches above the soil, than, owing to the discrepancy between heat and light, and, of course, our impatience, symptoms of this drawing will appear at early periods. However, now the bottom-heat will perforce decline, and this alone will cool their ardour; but by this time the plants will be freely developed, and all that remains to be done, is, not forcing, but such a guarantee of warmth as will enable the plant to carry out its functions. Clear glass overhead, and, of course, all the light possible, with a most liberal ventilation on all fitting occasions, will nearly complete the rest. It is worthy of remark, that early Potatoes do not bear "earthing-up" so well as the out-door crops; it, however, is well to add a little mellow soil or leaf-mould, about an inch or two drawn to their stems when they are about six inches high. As to watering, little or none should be practised until the

young Potatoes are large as marbles; then one thorough watering may be given—the water tepid, and of a manurial character. Two things are especially to be avoided—"drawing," and frost; for the former, ventilate freely; against the latter, provide a good covering.

R. ERRINGTON.

RENOVATION OF OLD TREES.

AFTER all that has been said or done in comparing the beautiful tints in the flowers of certain Lily-like plants to the female complexion, what does it amount to? Only to the mere fancies of some great authors, who have thus evinced their respect for "the *jeu d'esprit* of a distinguished man," as Dr. Herbert asserted, long since, in reference to Linnæus having fixed on the *Bella Donna Lily* of the Italian gardens for the type plant to represent the *Amaryllis* of Virgil. Not so, however, are the labours of those who have written on the analogy between a man and a tree. There is, indeed, a very marked resemblance between men and trees, take them how you will. Trees are living beings, like ourselves, and they are as susceptible of good or bad usage as any of us. They require food, air, light, and warmth, as we do; the earth is their larder, and they derive their nourishment from it by the mouths of their tubular roots, otherwise called spongioles, as we do by other tubes, called lacteals, which convey the essence of our food to the lungs, where it is prepared for blood and muscle, and for flesh and bone. The leaves of trees act the part of lungs, and thence spread out the elements of wood and fibre, and all the essentials which complete the system. We say trees are "proud," and we use certain means to take the pride out of them, or to heighten their pride, according as we want their lofty-bearing to suit our own purposes. We affirm that trees are sulky, and we humour them as nurses do a spoilt child. We say they are healthy, or they are strong, and we know they carry loads; we also say they are not healthy, and we doctor them, and there is not a doctor in London who can furnish a case of disease in his own practice for which we could not produce a similar or analogous case from among trees. A tree is as capable of being poisoned as a man; and if it takes too much, or gets too little, of the necessities of life, it will tell of the injury by symptoms, just as plainly as we can by words. If a big boy knocks his thumb against the door-knocker, he may put it into his mouth, it is true, but he will have "a gathering," and he may lose his nail before it is all over. An accidental knock with a hammer kills so much of the bark of a sapling tree, but new bark comes under the bruised part, just as the new nail comes under the old one, and the dead bark is cast-off without an effort, but the boy, after a while, for want of more patience, pulls off the old nail, "like a man." A poultice would have brought the thumb sooner "to a head," and a plaster would have the same effect on the injured bark. A young man sprains his ankle in a polka, but the doctor, by bandaging and "keeping him quiet," puts him on his legs again, and his wedding comes off in less than a month; a sudden twist nearly severs a branch from a "main leader," and the gardener, by the same means, insures a reunion in one growth, that is, by the growth of one season. A Russian officer of full age receives a "flesh wound," deep and dangerous, from an infidel Turk, but "his blood is up," and his flesh and blood come again fresher than before. A clumsy rustic, while thinking about his Molly, allows the wheel of his more clumsy waggon to "bark" the tree by the side of the gate, but the wound heals up again, though he is none the wiser. Here analogy must cease for the present, as it is far different from the case of the good old man, for

when "the silver cord is loosed, the mourners go about the streets." The pith, or silver cord of the aged tree, yea, the very heart-wood itself, may rot and crumble into dust, or go to feed the branches, and still, and yet, dissolution *may* be afar off. But when the old Yew or Holly, by the side of the church, ceases to put forth young wood; when the berries "are in proportion to the leaves as two hundred to one;" when the leaves come smaller and much less in number, year by year; when they come later, and fall off earlier, than was their wont; and when holes, or "apertures in the upper part of the trunk," denoting a hollow centre, are as manifest as the mid-day sun, is it possible to repair the vigour of the tree, or to weather off its threatened dissolution?

This question has, doubtless, been asked of every gardener, of any standing, in the country, but not more explicitly, and to the point, than in the subjoined letter to THE COTTAGE GARDENER:—

"I am the custos of a large Holly-tree, which I imagine to be nearly as old as the church beside which it stands, thus carrying back the date of its planting some five or six hundred years. No branches have been allowed to grow from it nearer the ground than ten feet. Its head is very large, but has latterly made so little wood, and become so denuded of leaves, as to betoken great weakness, if not decay. The berries which it produces this year, in proportion to the leaves, are as two hundred to one.

"The extremities of the branches undergo a considerable clipping every Christmas. Would you recommend, in preference, that some of the larger limbs be taken out?

"There are one or two small apertures in the upper part of the trunk, which, perhaps, admit some quantity of rain, and so cause decay. With what material might they best be closed?

"The circumference of the tree, at four feet from the ground, is four feet nine inches.

"As I am very anxious to infuse fresh vigour into this much-admired piece of antiquity, I shall look for your advice with much interest.—CLERICUS."

That trees have the power to heal over large wounds made in them, by accident or by design, is a fact that has been known, and that has never been disputed, for ages. Grafting and ringing fruit-trees are familiar processes founded on such knowledge, but the way in which new wood is formed to cover old wounds, has been a point in dispute ever since the formation of wood has been admitted as a branch of science, or rather, as part of that branch of science called vegetable physiology. The oldest and best known case in this country, relative to that dispute, is Mr. Knight's explanation of a theory or hypothesis set forth by Mr. Forsyth, gardener to George the Third, about a discovery he made, or believed he made, for renewing old and worn-out fruit-trees, by so operating upon them, as to cause new wood to be made to cover old parts, and, as a consequence, the growth of young, healthy branches from the new wood so produced. Mr. Forsyth was on the right scent; his old trees did certainly make new wood, and deep wounds or cankered parts were cased over by it, as he said, and as a parliamentary committee affirmed, but his explanation of the way in which the new wood was made was entirely wrong, or was, at least, voted as such, and the error, the "disputed point," as explained by Mr. Knight, cost the King's gardener just £1,500. Parliament had voted £3,000 for the discovery, and this brought a hornet's nest about their ears, as the story goes, and the upshot was, that only one-half of the grant was paid to the discoverer. Mr. Forsyth invented a kind of plaster—the ingredients I forget, except the cow-dung and the dust from old dry mortar, or ground, or burnt bones—and he believed that this plaster would cause new wood to grow over any part of a tree, as it were, of itself, just as some country people believe, to this day, that certain plasters are the sole cause of healing bad wounds; thus putting cause for effect.

Mr. Knight controverted this theory, and, like Duhamel, his contemporary on the continent, maintained that the new wood was made by the leaves, and sent down to cover the parts, in the shape of roots from the buds; and between the two, this theory had soon got the upper hand, both here and on the continent. Still there were dissentients at home and abroad; but now, people here, as well as on the continent, begin to believe that Forsyth was just as near the truth as either Knight or Duhamel, and that mysterious plasters are quite as capable of making new wood, as "the roots of buds;" that it is not essential, *now*, to have communication between the pith and the bark of a tree; that the heart-wood does not inclose the heart or seat of life in a tree; and, in short, that the life of a tree is in the opposite direction from the heart; that the seat of life, in the Oak, and other trees, is changed every year, and every year is receding farther and farther from the heart; that the whole surface of a tree, and the immediate parts just under the bark, from the topmost bud downwards, is one huge seat of vitality, and that if blood, or true sap, is supplied to the seat of life in due quantity, the life, or vital force, is able of itself to do the rest; supply the warp and woof of the "piece," and work up the "fabric" into sound, solid timber, without any aid from the buds at all. The bark of the tree is, therefore, the natural covering for the real seat of life; and if, by any means, this covering is destroyed, a substitute must be found immediately, to secure the part from the action of the air, else that portion of the life-seat is killed, not as timber, but as far as the making of new wood is concerned; still, as the seat of life is renewed every growing season, a small wound, or this deadened part, will soon get covered from the living parts round it. Hence, it would appear that Knight and Forsyth were both right, as far as the formation of new wood was concerned, and both wrong as to the cause or source of the new wood.

Without a plaster of some kind it is perfectly impossible that a large barked part of a tree can be covered with new bark under many years; whereas, a plaster, or any air-tight covering, by keeping the soft wood from drying up, enables it to come itself from *its own manufacture*, without any assistance from *fibres or roots sent down by the buds*, as was supposed by Mr. Knight, and as we have been taught since we left school.

This is enough for my purpose to-day, but I shall return to the subject if I am spared. I am going to recommend a new application of a well-known theory for the preservation of the old Holly tree by the Church of *Clericus*, and as *Clericus* does not know me in this branch of our craft, if I have thus made known to him that I really do know something of the matter myself, he and others will have the more confidence to take my advice and do as I say, and that is always some comfort. I would advise the Duke's maxim, however, in such cases, "if you want to have anything done, do it yourself." A particular friend of mine, acting on that maxim, some twenty years ago, has, at the present day, examples more extraordinary than any on record, which go to prove that a tree renews the seat of vitality at every succeeding growth, and not only that, but a perfect confirmation of another great fact, which is, that it is possible to bring an old tree, in the last stages of decay and rottenness, from the jaws of death, and to make it look as healthy, and cause it to put forth shoots and leaves with all the vigour of a sapling tree. All this I have seen myself this autumn; and had I not seen it, I would have thought it a hard saying, by one of the cleverest men of our age, that were it not for accidents and for external causes, "a tree might have lived from the creation to this hour." But trees being liable to all kinds of accidents, and to external and internal causes of decay and dissolution, do not and cannot live for ever, yet we might

so far guard them from accidents and causes of decay, that they could live much longer than they do, or can do without such aids.

I must first mention two very singular things about these trees, as they appeared to me; first, the coincidence of Mr. Forsyth having made so great a stir about the renovation of his trees in Kensington Gardens; and the second, that my friend made no stir at all about his means of renovation, although the experiments were carried on in a garden at Kensington; a garden, too, that was open to all the world, the fashionable, the philosophical, as well as the fustian jacket world for many years past. This was the beautiful garden belonging to the late dowager Duchess of Bedford, at Bedford Lodge, near Kensington, and her gardener, Mr. Cae, who is as well known for his practical applications of scientific knowledge, as he is for the displays he furnished, year after year, for the gatherings and public breakfasts in the flower-gardens at Bedford Lodge, is the lucky inventor of a new mode of making old trees young again.

Some twenty years since, but I have not the exact date, when Mr. Cae took charge of this garden, there were two large Oaks, near part of the boundary, in the last stages of decay; the few limbs were stag-headed, that is, bare, without leaves or bark, the centre of the old trunks were quite rotten down to the ground, from a pollard height, leaving a mere outside shell of living wood, and the inside of the shell was fast crumbling from the wet and the soft rotten mass in contact. These trees could be so ill-spared at that particular place, that anything that would keep them standing, if only to train climbers over them, and so hide the boundary line, would have been thought a great feat at the time; but Mr. Cae had a better and more durable scheme in his head; first of all, he had all the branches cut off as close and as smooth as possible, then he scooped out all the decayed mass from the hollow centre, and scraped the sides of the shell down to the ground, taking off every particle of decayed matter. He knew that if the shell could be kept dry, and excluded from the action of the air, further decay was next to impossible, at least, not for another generation or two; the plan he adopted for securing the insides of the two trees succeeded to perfection; and when I saw these trees, this autumn, each of them had large spreading heads, which looked as healthy and as full of large, soft, shining leaves as any tree in the garden, and were it not for the old gnarled trunks, which are of great size, I should take the trees to be no more than forty or fifty years old, and I can see no reason why these trees should not stand for centuries, if a communication can be kept between them and the roots.

The plan was this. He got together a large quantity of brick-bats, and sent a man to build a pillar in the centre of each tree, laying the brick-bats in Roman cement, and as regular as if he had been erecting a pillar for a monument; and every now and then he poured in the cement made into "grout," or liquid, of course using the common proportion of sand, so as to fill-up completely any spaces that might be left between the pillar and shell of wood; and at the top he raised the pillar a little higher than the irregular edges of the Pollard Oak, and there rounded it off, so that the wet could be thrown off, and the work was finished. Now, if the tree had died a lingering death after this operation, no wind could ever blow it down, it must have fallen piece by piece, as the parts rotted; and that, of itself, was thought to be worth the trouble and expense. This was not done in a corner; the time since it was done is now too far distant to allow a doubt as to the final result; and any one with a Sunday coat on will be allowed to see these trees, and prove my report; he will see, also, what half the world disbelieves; he will perceive, on close inspection, that new wood *will grow upwards*; the dome of cement in the centre is being fast covered by

the formation of new wood growing upwards and over it; and, altogether, it is one of the most interesting experiments I ever saw or heard of.

Now, it will be seen that three things seem essential to the perfect success of renovating all old trees like one of these—first; that all the branches should be cut close off; that all the dead matter inside the tree should be got rid of by some means or other; and that an air-tight composition must be used to fill up the cavity. It may be possible to succeed, in a great measure, to insure such a tree for a lengthened period by merely clearing the top part of the dead centre and filling it up in this manner; but it cannot be so sure as where it is possible to get the whole centre first cleared out. The reason for getting rid of all the branches is, that the bark on them is dry, and so hide-bound as to hinder the up-and-down circulation of the sap, and so preventing a renewal of the seat of vitality as completely as it should be. Should the young wood, made the first few years, not exceed a yard in length, being soft and young, it is more useful for the play of the sap than dry, old wood of three times the length; and for letting down more fresh wood and vigour into the old trunk, there is an ancient practice, now out of use, but, if rightly applied, *at the right time*, I am quite certain, from many experiments of my own, that it is possible to add much more vigour to an old stem than some people would believe.

When you bud a Rose-shoot in summer, the bark must part from the wood, but, other things being favourable, the parts heal again in three weeks; not, however, as has been taught, by wood coming down from leaves and buds, but from the vital action going on just at that place of the seat of life; if you make a slit in the hard bark of the Rose-stock at the same time, the edges of the dry bark may get drier and not unite; but you will find that the slit is closed as soon as the matter round the bud, and that without a bandage or plaster to keep off the weather. The new part in the slit is soft wood, and very tender bark; and if you could, by any process, get the whole surface of the old Rose-stock covered with such healthy wood, and more especially by such young shining bark, does it not stand to reason that all the workings of the sap would go on faster and more safe under so pliable a covering, than beneath bark as hard and dry as the top of an old boot? However, that is not so easily done as said. But suppose we made the first slit from the very bottom of the best young shoot, down through the old bark and collar, and never stopped until the knife reached a healthy root; and supposing that the length of the slit was no hindrance to its healing-up as fast as the short slip, as it certainly would not, a slit ten feet long will heal-up as soon as one of an inch in length, for this reason, that the slit is over the *seat of life*, its whole length, and that one part, or one inch of that seat, is as capable of healing, or making matter to heal, as any other; that I have proved scores of times. Now, if you can understand that old, dry bark can squeeze the trunk or stem of a tree, and hinder proper circulation, as surely as tight stays do, you will have no difficulty to understand that a cut like this will give more freedom to the tree; or, failing that, you must surely allow, that if there is an up-and-down current at all, it is easier for it to pass through the new wood and bark along this slit than in any other part. But there is another side to the question. The manufacturing process of *making* new wood goes on only in summer, or, say, during the growing season, and not quite that in many trees; and there are many trees that will not bear to have a slit made in their bark any other time, more than a Scotch thistle will bear to be sat upon, or sat against, with impunity; and when unthinking people have made such drains through the bark of such trees, at the wrong season, the parts either

cankered, or got stuck full of gum, and the poor ignorant wights thought the thing would not answer at all; but let my readers try what I say, and make a lot of slits, not deeper than the bark, in a Rose-stock, or in any tree they like, at the beginning of next July, and if they do not find them come as I say, and if they come and do not allow of freedom to both tree and sap, my name is not

DONALD BEATON.

APHELEXIS.

OF all plants called *Everlastings*, this genus, allied to, and not long separated from, *Helichrysum*, is none of the least interesting; whether we regard the habit of the plants, the manner in which the short, green, scaly foliage clasps, and thus gives somewhat of a variegated appearance to the whitish stems; the beauty of the flowers themselves, when fully expanded under a bright sun; and the months and years they will preserve their beauty when cut from the plant and kept clean and dry. The blooms of this and all the allied genera possessing these hard, shining petalled flowers, have a pleasing effect when mingled with some pretty dried grasses, as was spoken of last year, and present a better appearance than any artificial flowers under a glass case, unless the latter are indeed truly and beautifully moulded.

As in the case of many other of our most interesting plants, we are indebted for this charming family to rather high and dry positions in South Africa and New Holland. One of the most beautiful, with purplish-creamy-white flowers, *Aphelaxis sesamoides*, we owe to the Cape, and the same may be said of *humilis*, with its pinkish flowers; while what are generally supposed to be varieties of the latter, *macrantha*, large purple flowered, and *purpurea*, we have received from New Holland.

Where all are beautiful, and yet a selection must be made, I would give the preference to *humilis* and its varieties, and *sesamoides*, though *ericoides* and *fasciculata* are all worth growing.

The treatment of all is so nearly alike that I will make no exceptions as to the general management they require.

1. *Propagation*.—Small side-shoots getting firmish at their base are the best; but any young shoots will do possessing these conditions. Any young shoot that does not show bloom may be taken for this purpose. Of all times, about April may be considered the most suitable, and not later in summer than will prevent the cuttings striking before winter. Cut a cross clean at the heel, or base, with a razor-like knife: carefully cut off the small foliage for an inch or so, and then insert the cuttings in damp silver sand, with a layer of sandy peat beneath it, and in pots filled three-parts with drainage. If the cuttings are placed in a well-drained small pot, and that placed inside of a larger one, so that the bell-glass rests on the outer one, it will be all the better. The mode of doing this has been frequently explained. When the cuttings are watered, allow them to dry, and then place the bell-glass firmly over them, shading only in bright sunshine. At whatever time the cuttings are inserted, they may safely have five degrees more of heat than the plant stood in. A very slight hotbed in spring; a close, cold frame in early summer, would be the requisite positions. After the glass has been kept close for a few days to give an impulse to the vital energies, it may be elevated slightly on one side in an evening, which will purify the air and prevent damping, and be shut down close in the morning, until roots are made, when the glass should be gradually removed altogether. As soon as the plants are fairly rooted, shift into small pots, keep close until the rooting is going on, and then expose to more air by degrees.

2. *Choosing a Plant*.—Just as in the case of Heaths,

and other hard-wooded plants, where the advantages of the division-of-labour principle are brought fully into operation, it will, in most cases, be found more economical to purchase your plants from a tradesman who employs regular propagators, than to attempt to raise the plants from cuttings. Small, stubby plants, say in a sixty, or three-inch pot, should generally be chosen, as they are more obedient to the cultivator's wishes than older plants that have become stunted in their pots. These, if the pots are very full of roots, should be shifted whenever they are received, unless it be for a couple of months in the dead of winter—disentangling the roots, so that they will work freely in the new soil.

3. *Soil*.—I have found nothing better than fibry peat, with about a third-part of silver sand, broken pots, sandstone, and charcoal, from all which, except the sand, dust was excluded, breaking the pieces into sizes proportionate to the size of the pot, mixing it so that the whole would be open in its substance, and yet admitting of going closely together when pressed. As the plants increased in size, a little fibry loam, mixed with the peat, had a tendency to make the shoots more robust; but the loam should, even then, not be above a fifth of the compost.

4. *Time of Potting*.—If the plants are obtained in a small state early in spring, they may have two or three shifts during the first season, the shoots being stopped to prevent flower-buds being formed, and so as to secure a stocky plant; but the last shifting should not be given after the middle of August, so that the roots may cling a little to the sides of the pot before winter. After the first season's growth,—as then the plant may be allowed to produce its bloom,—the best time for potting will be after the plant has been pruned-in when done blooming, and just when the young growth is showing freely.

5. *Pruning*.—With the exception of nipping the points of shoots in a young plant, for the purpose of increasing their number, little more pruning will be wanted in an established plant than cutting back the longish shoots that supported the flowers. Every short, stubby shoot then existing, and every one that breaks after this, will, if grown freely, and moderately hardened in autumn, produce its terminal flower-buds in spring and early summer.

6. *Watering*.—With all the assistance of good drainage, water must be given very carefully during winter; taking care that the soil is never thoroughly dry, and never soaking wet. The latter will be guarded against by keeping the plants in smallish pots. As the shoots elongate in spring, and begin to show the flower-bud, more water will be necessary, and a little weak manure-water, two or three times a week, especially if of a cooling nature, such as from old cow-dung, will be of service. During that period, and also when growing, a frequent dash over head with the syringe will keep them fresh and vigorous. When the flower-stalks are cut back, it will be advisable to keep the plants cool and rather dry for a few weeks, until the fresh growth will demand more water.

7. *Temperature and Position*.—An average of 45° at night, with a rise of 10° from sunshine, and an open airy position, but free from sudden cold draughts, will suit them during the winter months. A similar position will be required in spring, and the higher temperature that the sun will give during the day, with abundance of air on the house. As summer approaches, it would be a great help to shade the *pots*, if at all full of roots, from the full force of the sun's rays. When the flowers are pruned off the plants should be cooler, and a little shaded for a week or two, if the weather is very hot. By-and-by the young shoots will bear the full force of the sun, and by the beginning, or, at farthest, the middle of autumn, the plants would be best fully exposed in a cold pit, where the pot could either be shaded or plunged,

putting on the sashes only in storms of rain, or as the cold nights approach; but by the latter time, say October, an open place in the greenhouse would again be their most comfortable home.
R. FISH.

MR. ERRINGTON AND FRUIT GROWING.

ABOUT three weeks ago, I met with one of our best gardeners, and, among other matters, he wished me to point out to him the numbers in *THE COTTAGE GARDENER* in which Mr. Errington described his peculiar mode of Pear culture. A variety of other matters drove consulting the indices of previous volumes out of my mind. Our brother chip had mislaid a letter he received on the subject, in the end of September, from a gentleman who had visited Oulton Park, and who was quite delighted with what he saw. Singular enough, the day after I read Mr. E.'s article in our last *COTTAGE GARDENER*, my friend transmitted me the missing letter; and I do not think I am breaking confidence, if, withholding names, I present you with a few extracts, even though they show, in the first place (somewhat unnecessarily) that Mr. E.'s practice is the highest, because the most successful, authority; and because, in the second place, they will furnish an opportunity to Mr. E. to point attention himself to those articles that clearly unfold his system; or, what would be better still, follow up the introductory article of last week with several fresh articles on the subject, describing the minutiae from the planting of the trees until they could stand alone, and be dubbed-in with the shears—taking Pears first, and other fruit afterwards; for such a tale is one that will bear repeating.

The gentleman says—"I was, yesterday, over the gardens at Oulton Park, where Errington is head gardener. His principle of training and cropping his fruit-trees is very superior to anything I have seen elsewhere, and so very economical, that before you carry out the plans you mentioned to me of planting your borders with fruit-trees, I should most strongly recommend you to go over to Oulton, and look at his method. Just now, the fruit on the trees is quite a sight. He told me he had already sent to Liverpool 1200 Peaches and Nectarines; and yet, after that, the walls were better covered with fruit than any I have seen. On these Peach walls there was not an atom of wall, from the coping to the ground, that was not so covered with wood that the walls were not to be seen; in fact, 'there was not a brick that did not pay rent.'

"His Pears are trained round the walks in two ways. First, table-fashion. In this the trees are not allowed to grow more than two feet high, and about three feet wide, so that when you look down the walk, you only see a broad green table. I never saw trees so laden with fruit. I really think there were more Pears than leaves. His pruning is also done on a different system. The whole of the new wood is tied in and never cut; when the tree gets very old, they simply tie the shoots in twice a-year, and at other times take the dubbing shears, and prune the tables, as you would a quickset hedge; when the wood is very old they cut out the old wood.

"The second way is like one table upon the top of another. It would appear as if the upper table would keep the sun off the lower one, but from the peculiar way of training this is not the case. The peculiar benefits arising from this method are—immense quantities of fruit—the very little space occupied—the trees being so low, no sun is kept from the rest of the garden—and no expense is incurred for trellis-work, there being not an atom of trellis-work in the garden."

The gentleman speaks in the highest terms of the cropping of the kitchen-garden; the growing Celery in beds, and the modes of earthing-up, &c.; but these are

more familiar to gardeners and amateurs generally, as I have practised the bed system since my apprenticeship days, and a capital plan it is.

Clear as the statements are, I have no doubt, that as respects the minutiae of first management, and the summer and winter pruning, and the double table, Mr. Errington will render them clearer still. If gentlemen will be "taking notes," even though they do not "print them," two things are perfectly evident: first, that there is no danger of gardening retrograding; and, secondly, that we blue-aproners must keep our ears and eyes open. Our friend could not visit *Oulton* at the time; but the delay may be the cause of Mr. Errington getting pretty well turned inside-out by the endless questionings of more pilgrims than one. Meanwhile, any light on the subject will be very acceptable. R. FISH.

THE NARCISSUS.

(Continued from page 164.)

Propagation: by Seed.—In my last paper on this part of the subject, I said that Mr. Leeds did not describe the method of hybridizing, so as to increase the probability of improving the variety. I shall endeavour now to supply that information. The improvements to aim at are superior form, fine colour, and large size. Form includes not only shape, but more substance in the petals, and cup, or nectary. Every observer of the *Narcissus* flower must have noticed that it has two parts—the outer one is the petal, which is entire, and is, therefore, called monopetalous; inside this there is, as it were, another petal, or, as botanists term it, a nectary crown, or honey cup; within this are seated the stamens, six in number, alternately shorter. In the centre of these is the stigma, situated on the top of a filament, and thence parted. On the top of the stamens are the anthers, or pollen cases. The reader, with a flower before him, will soon discern these several parts of the flower. Choose one, to bear seed, with the tube or petal of the best form and largest size. With a pair of sharp-pointed scissors cut off the anthers before they burst, then choose a variety with higher colours, or larger size, or any other desirable property. Just at the time the pollen cases open, and the pollen is seen like a fine dust within, proceed to hybridize, by emptying a few cases of the pollen upon a sheet of white paper, and then convey it to the flower prepared for it. With a fine camel-hair pencil brush a portion of the dust upon the stigma, taking care that some reaches all the three divisions of that organ. Then cover the impregnated flowers with some fine net muslin, and place the plant, if in a pot, in the greenhouse, or if in the open air, shelter the flowers operated upon from the rain. After the seed-vessels begin to swell they may be fully exposed. Then follow the treatment of the seeds as described in my last.

By Offsets.—Many of the *Narcissii* propagate themselves very freely by offsets. The class with one or two flowers on a stem, such as *bicolor* and *poeticus*, should remain in their place for two or three years. In old, neglected gardens they often are allowed to remain six, eight, or ten years, and these are in large masses; but, as might be expected, the flowers are small. The shorter time is quite long enough. In August, in the third year, take them up and separate such as are large enough to flower from the small ones. The latter are the increase of stock. Prepare, immediately, a bed from them, in a retired but open part of the garden. Take the soil out from fifteen to eighteen inches deep, place a layer of rubble at the bottom, three inches thick, and upon that lay a stratum of good hotbed dung the same thickness. Then mix about one-fourth of very well-decomposed cow-dung and leaf-mould amongst the soil. Fill up the bed, and let it remain for a fortnight to settle. Then draw

drills across it with a triangular hoe four inches apart. Plant the offsets three inches apart in the drill, and when all are planted level in the drills, edge the bed, and rake the walks, leaving all well finished in a workman like manner. These offsets may remain in this nursery bed for two or three years, and should never be allowed to flower during that time, the grand object being to increase the size of the bulbs, so as to enable them, when planted in the flower-garden, to produce them of superior qualities in form and colour. Offsets of the *Polyanthus Narcissus*, and its varieties, should be treated somewhat similar to the above, but require to be planted thinner, and remain a year longer in the nursery bed.

Section 3. Winter Treatment.—I put this season first, because I consider it to include planting, which is the first operation in the culture of these plants. This treatment, or culture, has three parts, viz., preparing the ground; planting the bulbs; and routine treatment through the season; to which may be added a few sentences on growing in pots and forcing.

Preparing the Bed.—Whoever wishes to grow fine flowers must duly prepare his soil for them, whether they are in beds, borders, or pots. I mentioned above the preparation of a bed for offsets and for full-sized bulbs; the only additions necessary will be a few inches more depth of soil, and a greater depth to plant the bulbs, especially such large ones as *Grand Monarque* and its allied varieties. One species I have found always to grow finer, and flower more freely, if planted in five-inch pots, three bulbs in each, and the pots plunged two inches below the rim in the bed or border; this species is the *Narcissus Bulbocodium*. I can strongly recommend this charming little plant. It has numerous long, round leaves, and the flowers spring up amongst them, rising not more than three inches from the ground. The petal is much smaller than the crown, or nectary, which is quite round, almost entire at the edges, and of a most splendid golden-orange colour. They are produced numerously. I have had a pot with three bulbs in it, and six or seven flowers open at once, with several others coming on in succession. I defy any one to produce at that season (April) a more glorious hardy plant.

After the bulbs are all planted, it would be advisable to cover the beds with some half-rotted leaves, short litter, or even some spent tanner's bark, to keep out severe frost; and when the milder months of spring arrive this shelter should be removed, and the soil gently stirred with a small three-pronged fork, to admit the heat of the sun and the genial showers of spring.

T. APPLEBY.

(To be continued.)

THE WOODS AND FORESTS.

THERE is no part of the culture of the earth's surface so little understood on scientific or practical principles as that of the Wood or Forest. In many countries, nature has done this for man without any care or trouble from him; but in thickly-populated countries, such as Great Britain, the forest has necessarily given way as the land was wanted for the growth of pulse, corn, or fodder. In such countries, the value of timber has greatly advanced, and importation has been called into requisition to supply timber for dwelling-houses, and various other purposes in domestic economy for which it is required. This is become, now, a very important item in our outgoings, and such countries as Russia, Sweden, Norway, and North America, have had large sums of money remitted to them for this article alone. Yet, we have large tracts of land that would grow immense quantities of timber were it properly drained, properly planted, and proper care bestowed on it afterwards. We have

our well-cultivated farms, our well-manured gardens, our splendid conservatories and flower-gardens, all diligently cared for and attended to, which is all right, proper, and highly commendable. Yet, why not attend to our forest lands also? Surely, when we remember that the wooden walls of old England are our glory and defence, and that upon their efficiency and due support almost our very existence, as a nation, depends; remembering, also, that these same floating defences are formed principally out of our own noble Oak, the glory of our island, I say, surely we ought to devote a part of the energies of our strong-armed countrymen to the culture of our woods.

I have had these ideas floating in my brain for some time, and having, as our readers well know (by my "Jottings by the Way"), frequent opportunities, during my long journeys, of seeing different gardens, I often had my attention drawn to the state of the woods and forests in various parts of the country. I have endeavoured, in my papers on "Coniferæ," to invite such as have it in their power to encourage the planting of the more valuable timber species as timber, as well as for ornament, I trust with some little good effect; and I purpose, now I am from home, away from books and my chimney corner, to write a few, perhaps rambling, ideas on the state of woods, plantations, or forests, as they have come under my observation during the last quarter-of-a-century, together with a few practical hints on their improvement and increase by planting waste lands.

The state of many, far too many, of the woods of this country is most deplorable. A contemporary gardening publication has lately shown how wretchedly the national woods and forests are managed, with much force and truth. I have seen some of them, and can bear witness to that truth. The reason is, that men are appointed to manage these forests who have had no experience in wood-craft: hence they cut down trees that ought to stand, and leave such as ought to be cut down; besides, also, cutting-down too many at once, merely to make a sale, to show an increase of income for the time; such sales being most ruinous to the income of after years; putting one in mind of the impatient, unthinking boy, who killed his goose that produced golden eggs, to, as he foolishly imagined, have all his treasures at once. This principle has been carried-out to a great extent in the public forest lands of our country.

Let not the private owners of woods think that they are altogether unblameable in this respect, because they, or their immediate predecessors, have planted large tracts of waste or unprofitable lands, and have not cut any down, but left them all to grow. This is quite as great a mistake as too severe thinning; and in this state I find, with some honourable exceptions, are the plantations of woods belonging to private individuals. In fact, you can hardly ride ten miles through any part of the country but you come across plantations of timber trees of some twenty or thirty years old, but which are so thick that they are drawn up into little better than fishing rods; or, if some would-be-knowing-one has recommended the thinning process to be commenced forthwith, then down come nine-tenths, or, perhaps, more; and then the tall, rather slender ones left behind are driven about with the winds, and scarcely one in ten ever recovers this starving process. Then, again, there are many tracts of woodland that are planted without due preparation; the plants are had from some nursery, and stuck in anyhow, and these are expected to grow and form timber!

I once had a practical illustration of this careless and injudicious way of cramming in as many trees as possible into a tract of land without any care. When I first entered the service of T. Brocklehurst, Esq., I was desired to survey a piece of forestry that had been

planted four or five years, and, as he said, had not grown at all to his satisfaction. Accordingly, I inspected the plantation. I found Oaks, Ashes, Elms, and Larches, all planted very thickly on a wet swamp, many of them were dead, and those that were alive had not grown as many inches as they had been planted years. On the ground, here and there, were several large Alders laid on one side by the wind, for even this water-loving tree had no roots to sustain such heavy tops. To remedy this state of things, I proposed first to cut down and dispose of all these old useless trees, and, when they were removed, to have the ground thoroughly deep drained, and these drains to be open ones. My project was approved and carried into effect. The old Alders were removed, and drains cut across the ground six feet deep, and eighteen feet from drain to drain. All the soil from each drain was cast on the surface right and left, and levelled down amongst the young trees. The good effects of these operations were soon manifest; the removing the old cranky trees allowed a freer circulation again amongst the young trees, and this destroyed the lichens and mosses, and the deep ditches effectually drained the soil for the roots. The following year many of the trees grew a foot or more higher, and the year following, some even advanced as much as three feet in height, with a proportionate increase in thickness of stem. The cure was complete. So rapidly did they grow, that I was obliged the third year to thin them out greatly. I made use of them to plant in other places, especially the hedge-rows of the farms on the estate. I have been told, the trees are now (that is, twelve years after being properly drained) many of them thirty feet high, with stems six inches in diameter.

Here is a practical and now living example of what may be done with young unhealthy plantations. In my next, I will give examples how over-crowded plantations should be judiciously thinned. T. APPLEBY.

(To be continued.)

TRENCHING GROUND IN AUTUMN.

THE subject to which I now beg to call attention is the tillage of ground in autumn, of which some difference in opinion yet exists; some insisting that all vacant ground, without any exception, ought to be at once turned-up, unless it be so much soddened by rain as to prevent its being done without injuring it by the consolidation its component parts receive in the progress of digging, forking over, or ploughing, as the case may be. Now, there are many who yet believe that a certain description of heavy land is better lying in rather a solid state through the wet months of winter than being turned-up rough for the action of the wind and frost to pulverize.

Widely different as these notions are, they are, in their respective cases, both right, as instances can be shown wherein their efficacy can be proved by the best of all tests—experience; and such results will present different aspects; in one case, a fine friable compost will be left on the top of ground dug or ploughed-up in autumn, and exposed to a winter's frost; in another, the friable, or looser matter, will be very small indeed, and all below it as stiff and sour as if it were intended for bricks or earthenware; these different results, arising from causes for which the season is least of all to be blamed, forms, however, a very important problem in horticulture, or the tillage of land. This, however, must be solved in accordance with certain circumstances to be named hereafter; and, in the first place, I may observe, that where garden ground will not allow of being dug in the autumn, there is something radically wrong in the management it has received; for, where ground had been some time under

cultivation, it ought to be in such a condition as to resist the evil effects of a wet winter; not but that it will, in common with all other soils, suffer from the protracted wet; still, it will be much less so where the superfluous water can find an outlet, instead of souring amongst the stiff and impervious subsoil; this, therefore, points out the necessity of draining, in order that rain may be quickly carried off without being allowed to stagnate in soils to the detriment of all cropping then and after. Now, there are many soils of a productive nature resting on an impervious clay, so near to the surface as to leave no room for the water to stand without being in immediate contact with the cultivated soil; in all such cases, effective draining is the only sure remedy; for, though there be no superfluous water found in such soils, except after heavy rain, and the wet weather that occurs in autumn and winter, yet this is quite sufficient to call for their drainage, because, though water, doubtless, affords the ground much enriching matter, still, when allowed to stagnate, its utility is more than neutralized by the evils that follow in its train. However, as most works on draining have explained all this, nothing here remains to add, save that when ground of this description cannot be drained, or it be necessary to defer a season to do so, the digging, or ploughing, ought to be deferred until spring also, as, by that means, the ground, having been lying tolerably solid and compact, is not likely to be charged with so much water as when it is more loose and open as it is after digging, trenching, or ploughing.

Now, though there are many cases of the kind just mentioned, yet by far the greater proportion of a contrary description, wherein a benefit is conferred in autumn, rather than otherwise, by the ground being dug, or otherwise turned-up, as, by that means, it is so placed as to receive the fertilizing properties of frost without incurring the evils of wet; I therefore advise the cottager, and less-experienced amateur, at once to have such ground turned-up in such a way as to expose as much of it to the action of the atmosphere as it is possible to do. Ridges, about two feet wide, are better for that purpose than plain digging, and the ground must, nevertheless, be turned-up as rough as possible as well; some little regard must also be had to the kind of crop under which it is likely to be placed the ensuing season; but, for most purposes, the ridging system will be most available.

Whatever mode may be adopted to place the ground in for winter, it must be borne in mind that it must not be operated upon when wet; but much benefit will accrue by taking advantage of the frosts of winter to dig or ridge a portion of it over, so as to expose another portion of it to the fertilizing effects of the elements. Now this is best effected when there is just sufficient frost to bear trampling on without impeding the working of the tool; and it often happens that such a warning does present itself; when such is the case, by all means let it be made use of.

J. ROBSON.

THE MANAGEMENT OF FORWARD EWES AND LAMBS.

THERE is no portion of farming economy more important than that part which relates to the management of Sheep Stock, and it may also be said that none will prove more profitable when constant care and unremitting attention is bestowed upon it. But Sheep-farming embraces a considerable variety with regard to breed, age, and sex. I therefore propose, in this paper, to confine my remarks to the management of Forward Ewes, and the rearing and fattening of Early Lambs; and I hold

this to be the most difficult point of the whole routine of Sheep management, requiring, as it does, great judgment, experience, and foresight, coupled with the most vigilant superintendence.

This kind of stock is best calculated for arable farms of the southern counties, for although many portions of the kingdom produce feed of all sorts of the best quality, yet such is the influence of climate upon the rearing and fattening of Early Lambs, that it would not be advantageous to rear them upon cold and bleak situations. All kinds of Sheep, when fattening, require the best food which can be obtained, but in the case of Early Ewes and Lambs, a provision must be made in an exceptional manner, having regard not to one kind of food only, but to every kind which the land can be made to produce, and adapted for the purpose, in order that a great variety, as well as abundance, may be available. I, therefore, propose, that in addition to the ordinary produce of sheep's food upon the farm, that Italian Rye Grass should be grown in the Wheat, or Oat Eddishes, upon all that portion not required for tillage between the months of September and December. This is done by seeding the corn land in the month of March. A portion of White Carrots should also be grown in lieu of, or in addition to, the Turnip crop; Mangold Wurtzel may also be grown to some extent, as it is found very excellent food late in the spring, when the Swedes begin to lose their feeding properties.

The breed of Sheep kept for the rearing of Early Lambs is the Horned Dorset, peculiar to the counties of Dorset and Somerset; we, however, sometimes meet with flocks of the same breed without horns, but they are quite an exception, and were originally propagated from the same stock. Early Lambs are occasionally obtained from the South Downs, and other breeds, but after many years' futile attempts to obtain Early Lambs as a rule from these breeds, it is now considered a hopeless case, and the Horned Dorset is the only breed which can be depended upon for that purpose.

In selecting Ewes of the horned variety, it is requisite that they should have been put to a South Down Tup, and by all means chosen of good quality, being well made, short legged, and clothed with fine wool. This breed of Sheep has been greatly improved in quality and symmetry within the last fifteen or twenty years; but the number of flocks have been much diminished, having given place to the South Downs upon the hill farms and in exposed situations. Formerly, many flocks of these Horned Ewes were propagated almost entirely with regard to their milking qualities and propensity to produce twin Lambs, in doing which the shape of the animal was, comparatively, disregarded. We still meet with flocks reared in the same manner at the present day; hence the necessity of the before-named selection. During the last twenty-six years, I have continued to keep this breed of Sheep, and I have found, in some seasons, when my Ewes have been ill-shaped, that they have yeanned an immense number of Lambs, and have proved very milky, and made Lambs of the first quality; they would not, however, fatten whilst suckling

their Lambs. At other times, when I have obtained the choicest description of Horned Ewes from the best districts of Somersetshire, I have found that they not only brought a large number of Lambs, but that the Ewes and Lambs would both become fat and fit for sale at the same time, and in first-rate condition.

These Ewes are sometimes sold in the spring of the year, but the usual period at which the breeders of this kind of stock offer them for sale is at Michaelmas, just before the time of lambing. Since, however, the number of flocks have been diminished they have become comparatively dear, and it is, therefore, a common practice for some graziers to purchase, and keep over for trading purposes the second year, those Ewes which may, from circumstances, be found poor, or in merely stock condition in the spring of the year.

The plan of breeding from the Ewes the second season is found to answer a good purpose upon small arable farms having but little pasture land attached, it being the best policy to keep a stock-flock in summer, and a fatting-flock in winter; for it must be borne in mind, that this kind of Sheep does not fatten readily during the summer months in the enclosed districts of the Southern Counties, because they feel the annoyance of flies more than most other breeds.

The custom is to turn the Tup with the Ewes the first week in May; a short, fine-woolled Sheep should be selected, in order that the offspring, more particularly in the case of twin Lambs, which generally require to be kept a longer period, may possess a close coat, it being well known that loose, hollow wool prejudices the sale of Lambs in the live market. The Tup should also possess good symmetry and plenty of flesh; a well-bred Hampshire Down I have found better than a pure-bred Sussex Down, for the Lambs reared from the latter do not possess a due proportion of lean meat, whereas, those produced from the former are highly esteemed by the consumers of the present day, affording, as they do, a well-combined proportion of flesh and fat.

The Rams should be shorn about a fortnight previous to being turned amongst the Ewes, and kept in an open place up to that time, in order that they may gradually become accustomed to the loss of their coats; otherwise, in case of their being turned into the open field when recently shorn, they suffer much in health and condition during the night frosts, which often happen in the early part of the month of May. When these Ewes are kept entirely for the purpose of producing early Lambs they should never be shorn until the Rams are taken from them, which should be done about the 20th of June; in that case, the portion of the flock of Ewes which proved to be pregnant would finish dropping their Lambs about the 14th of November. It is not advisable, in a flock of early stock, to have Lambs fall after that period; for in case of Ewes lambing later they do not fatten readily with their Lambs by their sides.

The manner of keeping the Ewes must now be considered, as it will most probably have its influence in inducing the Ewes to offer to the Ram at the earliest time. Although the nature of this breed of Sheep will

go far in this respect, yet circumstances often arise, such as the state of the weather, to delay the breeding season; yet this may, in a great measure, be prevented by generous keeping, and by choosing a warm and sheltered situation for feeding them. I have found, at this particular period, the best way to bring the Ewes forward to the Ram is to feed them upon Trifolium, and cut Swedes or Mangold, placed in troughs, having also a change, or run upon dry pasture for a few hours during the day; but if the Ewes are further delayed in their season, it is a good plan to give them about half a pint of beans each per day, which will generally produce the desired object. It will, at all events, bring them forward in condition; and that portion of the flock which may not prove in Lamb will the sooner be fit for the market. After the Rams are removed from the flock, and the Ewes ascertained to be with lamb, it will be best not to keep them too high; it is, however, desirable that they should have two or three changes of keep during the day, but not of luxuriant, or rich arable grass. A dry pasture, or a change to a fold of tares, or similar food, would be most suitable, and they should, indeed, from this period up to the time of lambing, be managed as a stock or store flock, the object being to keep numbers, and to feed the land bare, for the sake of the manure. The travelling consequent upon their removal for change of food will also prove beneficial, for it is admitted by all flock-masters, that the Ewes and their offspring will be more healthy when the former have received a moderate amount of exercise during the period of pregnancy.

JOSEPH BLUNDELL.

(To be continued.)

SOUTH HANTS POULTRY EXHIBITION.

THIS was held at Southampton on the 24th and 25th of November, and was one of the best first Exhibitions of Poultry we have ever witnessed. There were 353 entries, and almost every class was well represented. The *Spanish* and *Partridge Shanghaes* were about the most deficient. *Coloured Dorkings* were good classes, both old and young birds, and in the latter, Mr. Turner would probably have carried off the first prize, as he did at Winchester, if Mr. Lewry, the well-known dealer, had not been permitted to enter the lists. Dealers should exhibit against dealers, and not against amateurs, for they have a greater advantage over the latter than nurserymen have over amateurs at flower shows, yet nurserymen always contend there for distinct prizes. Dealers in poultry should do the same, and it is very desirable to have their stock at exhibitions, one object of which is to assemble superior specimens. *White Dorkings* were shown in beautiful condition, as were all the classes of *Shanghaes*, or *Cochin-Chinas*, with the exception of those we have specified. There were seventy-nine pens altogether, the Buffs, as usual, much predominating. It is but due to Mr. Peters, of Birmingham, to state, that all the *White Shanghaes*, which took prizes both at Winchester and Southampton, were bred by him, although some were shown in the name of Mr. Holmes. The *Game* classes were more strongly represented than at Winchester, yet there was still room for much greater excellence. In *Humburgs*, the Spangled of both colours were much superior to the Pencilled. Other classes contained more than the average of good birds. *Ptarmigans*, as at Winchester, did not meet with much favour in the eyes of the judges. These were E. Hewett, Esq., of Birmingham, G. J. Andrews, Esq., of Dorchester, and Mr. J. Baily, Mount-street, Grosvenor Square.

Class 1.—SPANISH. Birds exceeding one-year-old.

4. First prize, H. F. Fisher, Blandford, Dorset. Age, seventeen months. 7. Second prize, The Right Hon. Lady M. Macdonald, Woolmer Lodge, Liphook, Hants. Age uncertain.

Class 2.—SPANISH. Chickens of 1853.

15. First prize, Lydia C. Stowe, Bredon, Tewkesbury. Age, six months. 13. Second prize, John Clarke, Shrub Cottage, Hartley Row. Age, six months.

Class 3.—DORKING (Coloured). Birds exceeding one-year-old.

26. First prize, Joseph Symmonds, Gorwell, Dorchester. Aged. 22. Second prize, H. F. Fisher, Blandford, Dorset. Age, nineteen months.

Class 4.—DORKING (Coloured). Chickens of 1853.

32. First prize, James Lewry, Hand Cross, Crawley, Sussex. Age, five months. 31. Second prize, James Lewry, Hand Cross, Crawley, Sussex. Age, five months.

Class 5.—DORKING (White). Birds exceeding one-year-old.

47. First prize, Mrs. Mills, Bisterne, Ringwood. Age, eighteen months. 48. Second prize, Mrs. Mills. Age, eighteen months.

Class 6.—DORKING (White). Chickens of 1853.

52. First prize, Nathaniel Antill, Half-moon Street, Portsea. Age, eight months. 51. Second prize, Henry Bone, Avon, Ringwood. Age, five-and-a-half months.

Class 7.—COCHIN-CHINA (Cinnamon and Buff). Birds exceeding one-year-old.

59. First prize, Charles Punchard, Blunt's Hall, Haverhill. Aged. 55. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Age, 1852.

Class 8.—COCHIN-CHINA (Cinnamon and Buff). Chickens of 1853.

72. First prize, Captain W. H. Snell, Artillery Ground, London. Age, cockerel and two pullets, eight-and-a-half months; one pullet six-and-a-half months. 75. Second prize, G. W. Johnson, Canon-street, Winchester. Age, seven-and-a-half months.

Class 10.—COCHIN-CHINA. (Brown and Partridge-feathered.) Chickens of 1853.

111. First prize, William Cave, Hartley Row, Hants. Age, seven months. 112. Second prize, Thomas P. Edwards, Railway Station, Lyndhurst. Age, eight months.

Class 11.—WHITE COCHIN-CHINA. Birds exceeding one-year-old.

115. First prize, Benjamin Holmes, 112, New Street, Birmingham. Age, cock, thirteen months; hens, fifteen months.

Class 12.—WHITE COCHIN-CHINA. Chickens of 1853.

123. First prize, G. C. Peters, Mosely, Birmingham. Age, six months. 121. Second prize, Benjamin Holmes, 112, New-street, Birmingham. Age, cockerel, six months; pullets, four months.

Class 13.—BLACK COCHIN-CHINA. Birds exceeding one-year-old.

126. Second prize, Mrs. Mills, Bisterne, Ringwood. Age, fourteen months.

Class 14.—COCHIN-CHINA (Black). Chickens of 1853.

131. First prize, Lydia C. Stowe, Bredon, Tewkesbury. Age, five-and-a-half months. 130. Second prize, W. P. Flight, Winchester. Age, five months.

Class 15.—MALAYS. Birds exceeding one-year-old.

133. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Aged.

Class 16.—MALAYS. Chickens of 1853.

134. First prize, James Leighton, 183, High-street, Cheltenham. Age, cock, five months; pullets, six months. 135. Second prize, James Leighton, 183, High-street, Cheltenham. Age, nineteen weeks.

Class 17.—GAME FOWL (White, Piles, Duckwings, and Greys.) Birds exceeding one-year-old.

144. First prize, John T. Ensor, Dorchester. Age, two years. 140. Second prize, R. W. Wilson, Stanford le Hope, Romford.

Class 18.—GAME FOWL (White, Piles, Duckwings, and Greys.) Chickens of 1853.

147. First prize, R. W. Wilson, Stanford le Hope, Romford. 146. Second prize, William Deazley, Dunbridge, Romsey. Age, ten months.

Class 19.—GAME FOWL (Black-breasted and other Reds.) Birds exceeding one-year-old.

158. First prize, John T. Ensor, Dorchester. Age, two years. 152. Second prize, R. W. Wilson, Stanford le Hope, Romford.

Class 20.—GAME FOWL (Black-breasted and other Reds.) Chickens of 1853.

167. First prize, John T. Ensor, Dorchester. Age, cock, seven months; pullets, five months. 164. Second prize, H. F. Fisher, Blandford, Dorset. Age, six months.

Class 22.—GOLDEN-PENCILLED HAMBURGH. Chickens of 1853.

171. First prize, Mrs. Mills, Bisterne, Ringwood. Age, nine months. 172. Second prize, Thomas P. Edwards, Railway Station, Lyndhurst. Age, six months.

Class 24.—GOLDEN-SPANGLED HAMBURGH. Chickens of 1853.

176. First prize, Henry Fookes, Whitechurch, Blandford. Age, six months. 178. Second prize, Thomas P. Edwards, Lyndhurst Station. Age, six months.

Class 25.—SILVER-PENCILLED HAMBURGH. Birds exceeding one-year-old.

180. First prize, Nathaniel Antill, Half-moon Street, Portsea. Age, two years. 179. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Aged.

Class 26.—SILVER-PENCILLED HAMBURGH. Chickens of 1853.

189. First prize, Joseph Symonds, Gorwell, Dorchester. Age, six months. 186. Second prize, Mrs. Mills, Bisterne, Ringwood. Age, six months.

Class 27.—SILVER-SPANGLED HAMBURGH. Birds exceeding one-year-old.

193. First prize, William G. Chambers, 83, High-street, Portsmouth. Age, two years. 192. Second prize, Thomas McCann, Graham House, Malvern. Aged.

Class 28.—SILVER-SPANGLED HAMBURGH. Chickens of 1853.

200. First prize, H. F. Fisher, Blandford, Dorset. Age, five months. 202. Second prize, Mrs. Mills, Bisterne, Ringwood. Age, six months.

Class 29.—POLAND (Black with White Crests.) Birds exceeding one-year old.

207. First prize, William G. Chambers, 83, High-street, Portsmouth. Age, two years. 205. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Age, 1852.

Class 30.—POLAND (Black with White Crests.) Chickens of 1853.

213. First prize, Thomas P. Edwards, Railway Station, Lyndhurst. Age, six months. 212. Second prize, Thomas P. Edwards, Railway Station, Lyndhurst. Age, six months.

Class 31.—POLAND FOWL (Golden). Birds exceeding one-year-old.

216. First prize, William Symonds, Weymouth. Age, two years. 214. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Aged.

Class 32.—POLAND FOWL (Golden). Chickens of 1853.

220. First prize, H. F. Fisher, Blandford, Dorset. Age, two months. 221. Second prize, Thomas P. Edwards, Railway Station, Lyndhurst. Age, six months.

Class 33.—POLAND FOWL (Silver). Birds exceeding one-year-old.

224. First prize, C. Rawson, The Hurst, Walton-on-Thames. Aged. 225. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Aged.

Class 34.—POLAND FOWL (Silver). Chickens of 1853.

235. First prize, William Symonds, Weymouth. Age, eight months. 230. Second prize, W. G. K. Breavington, Sutton, Hounslow, Middlesex. Age, six months.

Class 36.—CROSS, BETWEEN ANY BREEDS. Chickens of 1853.

239. Second prize, Henry Girdlestone, Lyndhurst, Hants. (Cochin-China and White Dorking.) Age, seven months.

Class 37.—BANTAMS (Gold-laced).

252. First prize, Capteels Cooper, Guildford, Surrey. Age, seven months. 243. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Aged.

Class 38.—BANTAMS (Silver-laced).

258. First prize, Capteels Cooper, Guildford, Surrey. Age, various. 256. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Aged.

Class 39.—BANTAMS (White).

261. First prize, Thomas P. Mew, High-street, West Cowes, Isle of Wight. Age, unknown. 264. Second prize, William Symonds, Weymouth. Age, two years.

Class 40.—BANTAMS (Black).

268. First prize, Major-General Buckley, New Hall, Salisbury. Age, unknown.

Class 41.—BANTAMS (Any other variety).

269. First prize, S. Macnaghten, Bitterne Manor House, Southampton. Age, six months.

Class 42.—GEESSE.

273. First prize, Henry Fookes, Whitechurch, Blandford. Age, unknown. 270. Second prize, C. Rawson, The Hurst, Walton-on-Thames. Aged.

Class 43.—AYLESBURY DUCKS (White).

283. First prize, W. G. K. Breavington, Sutton, Hounslow, Middlesex. Age, eight months. 290. Second prize, Thomas P. Edwards, Railway Station, Lyndhurst. Age, six months.

Class 44.—DUCKS. (Rouen.)

298. First prize, Charles Punchard, Blunt's Hall, Haverhill. Age, eight months.

Class 45.—DUCKS. (Any other variety.)

305. First prize, Mrs. Mills, Bisterne, Ringwood. Age, six months. 306. Second prize, The Right Hon. Lady M. Macdonald, Woolmer Lodge, Liphook, Hants. (Buenos Ayres.) Age, seven months.

Class 46.—DUCKS. (Muscovy.)

309. Second prize, Nathaniel Antill, Half-moon Street, Portsea. Age, four months.

Class 47.—TURKEYS. Birds exceeding one-year-old.

311. First prize, The Right Hon. Lady M. Macdonald, Woolmer Lodge, Liphook, Hants. Age, unknown. 310. Second prize, C. Rawson, The Hurst, Walton-on-Thames. (American.) Aged.

Class 48.—TURKEYS. Birds hatched in 1853.

315. First prize, The Right Hon. Lady M. Macdonald, Woolmer Lodge, Liphook, Hants. Age, six months.

Class 50.—ANY OTHER DISTINCT BREED. Chickens of 1853.

331. First prize, W. P. Flight, Winchester. (White Polands.) Age, seven months. 330. Second prize, Henry Howell, Curdridge Parsonage, Botley. (Parrigans.) Age, cockerel and one pullet, six months; two ditto, four months.

POLMAISE HEATING.

THAT Polmaise, the fire-king and arch-enemy to vegetable life, is the worst system of all that has been brought into light since 1820, when applied to gardening purposes, such as heating Pine Stoves, Greenhouses, &c., I am prepared to say is perfectly true, and that no thorough practical gardener can deny, at least, if he has had the working of one twelve months, and feels disposed, as I do, to tell the truth about the matter.

I have had to do with nearly all kinds of houses, and have lived in some of the best and largest forcing establishments in England many years, and have taken many a Banksian Medal, in my time, at the Chiswick Horticultural Shows, but never did have to do with any system of heating that had less merits than the one alluded to. In the first place, it dries everything up, whether the sun shines or not, in the course of a few hours, consequently, it produces an atmosphere unfavourable to the growth of plants, so much so, that every particle of moisture the earth in the pots contain is evaporated prematurely, and particularly if we endeavour to keep up anything like a suitable temperature for that noble fruit the Pine-Apple. At the same time, it produces such an offensive smell, which, at all times, is so readily perceived by the nasal organ in stepping into the house, that one is apt to exclaim that the crater of Etna could not produce a more disagreeable one, and that, too, with as much air as we choose to admit. Other evils exist more numerous than these mentioned. Thus, after a sharp night's frost in March, the sun invariably shines very hot during the day, and by keeping up a moderate temperature in the night there unavoidably is a very great deal of fire-heat all day long; and what with the heat of the fire and the sun much air must be given, and, of course, in larger quantities than by any other system of heating. The bed for bottom-heat and the internal atmosphere of the house are heated simultaneously, so that we cannot heat one independent of the other; so, in summer time, we can get no heat to the bed, except we heat the house also when not required.

And what is still worse, the inhabitants of such a house are liable to be scorched, singed, and nearly roasted sometimes; then follows blistered, blotched, and curled foliage. To say nothing of the great nursery it forms for red spider, thrips, and scale, evils in themselves great enough to discourage the most enduring and most persevering gardener in the world.

Again, should the joints of the pipes give way, sulphur gets out, fills the house, and nearly destroys everything in it. Cucumbers, French Beans, and Vines are the first to show the work of this dangerous system.

It is true, we can now and then happen, out of a multitude of Pine plants, to get one or two good fruit, but this is not what we want in these go-a-head times; indeed, our aim ought to be to employ that system which suits the welfare of the plants, and that only if we intend to profit thereby; I therefore have no hesitation in saying, that he who wishes to see his plants and fruits growing to perfection must use hot-water.—GOLIGHTLY, Carmarthenshire, South Wales.

HARDY BORDER PLANTS.

(Continued from page 127.)

ACHILLEA PTARMICA FLORE PLENO.

THIS double variety is sometimes called Double Ptarmica, or White Batchelors-buttons. It is a variety, of course, of our common, indigenous species, *Achillea ptarmica*, of our fields and river-side banks, which is called Goose-tongue or Sneezewort. However, the double variety is an extremely beautiful border plant, and very useful as a late bloomer, flowering from the beginning of August to the end of September. Its stems rising from one-and-a-half to

two feet high, make it a very desirable plant for the second row in the borders or beds. Its flowers are produced in rather loose, spreading corymbs. All its leaves are strap-spear-shaped, pointed, equal, sharply saw-toothed and smooth.

Its creeping root puts up such a profusion of suckers all round its crowns, that they should be all cut or hoed off during the spring months, leaving the centre part or bunch from seven to nine inches in diameter.

When the bunches are attended to, and treated in this way, they may remain in the same spots in the borders for years. When increase is required, the whole plant should be taken up in the spring, and chopped through into two or four nice pieces, or if an extra bunch or two are required as late as when it has put up its profusion of suckers, which it does round the old-established plants, these may be taken up carefully, and separated from round the main crown. Take a handful of them together, and plant them in one hole made by the dibble, so as to form one snug bunch in the well-prepared border or bed, and watered. It flourishes in any good garden soil. These bunches soon become well-established in their situation, and make as neat or even neater bunches for autumn-flowering than the parent plants from which they were taken.

This double variety is mentioned as being found growing, in a wild state, as long ago as 1666, near Chilmark, in Wiltshire. It has also been observed in one of the little islands called Small Holme, in the Lake of Winandermere, previous to 1724, and since then it has been found wild at Ripton.

These pretty little double flowers in September (like the *Ranunculus aconitifolius plenus*, or Double Fair Maids of France, in May), are great favourites with persons seeking bouquets.

T. W.

THE GAPES AND ITS WORM.

A NUMBER of correspondents of THE COTTAGE GARDENER, have, from time to time, recorded their several observations of the presence of a number of small worms in the windpipes of chickens affected with the "gapes;" and many of them have gone on to show, that these parasites can be dislodged by that well-known "vermifuge," turpentine, either directly applied to the windpipe of the fowl, by means of a feather, or by causing the bird to inhale the vapour.

These facts, as they were observed, were recorded in good faith, and in all humility, in the attempt to trace effects to causes. There has been no evidence of "smiles of satisfaction mantling the lips," nor do I think that any of the said correspondents would have been bold enough to hazard a positive opinion, as Dr. Horner, of Hull, has done, on purely negative evidence. Dr. Horner dissected the windpipes of six chickens, which he says died of gapes, and he found no worms, upon which, and at once, he jumps to the conclusion, that the statements of the correspondents of THE COTTAGE GARDENER have all been wrong; and the sum of their description he "hesitates not" to declare "an error."

Again the worthy Doctor "hesitates not," and declares the disease of gapes to be a regular case of inflammation; in other words, *chicken croup*. We are, a little further on, supplied with the information, that "the fowl gapes to open a freer passage for the air!"

Dr. Horner admits that the dislodgment of the worms has been fully narrated, but says, that "no one has yet described" the parasite, "as situated in the windpipe, by dissection after death." Permit me to supply this missing link in the evidence.

Some months ago, my friend, Mr. Lort (who is known to many of your correspondents as a careful and skilful "Fancier" of some particular varieties of poultry), after communicating with me frequently on the subject of the best mode of applying turpentine to the interior of the windpipes of chickens, did, at my request, forward me, by post, a windpipe of one of his defunct Cochins-China chickens, which, he said, "he had suffered to die of 'gapes,'" expressing his belief that the application of the turpentine would have saved the bird, as it had done dozens of others; but, as I said, he allowed the chicken to die, that I might open its windpipe and judge of the

contents. I did so; and on slitting up the windpipe so sent, I found *six worms* surrounded by a reddish, but not particularly viscid "mucus."

I had not made a special study of Helminthology, and I was much engaged at the time, but still I managed to dissect several of the worms, and to examine the principal organs, alimentary and reproductive. Fortunately, I do not think I was liable to mistake semi-organised "shreds of membrane" for "*Annelida*" of a tolerably complicated structure; and this, from the circumstance of having for the

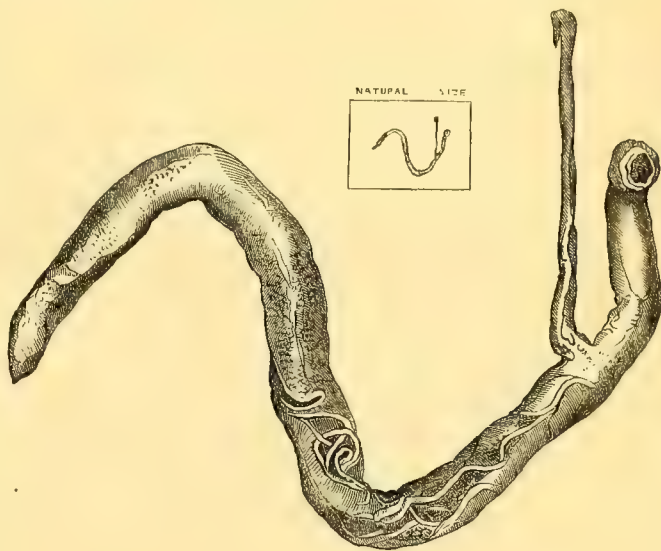
You will see that the worm was red in colour; the skin transversely striated; and that the creature was sufficiently transparent for its interior organisation to be very well distinguished even when it was looked at as an opaque object. Its length, as you will see, by the scale annexed to the drawing, is about three-quarters-of-an-inch, and though much of the original transparency is now lost from the action of the spirit, I think you would say, if you saw the original and this sketch together, that I have given a conscientious and true representation of what was before me.

I confess that I see no difficulty in believing that the presence of half-a-dozen of these creatures in the small windpipe of a chicken would be enough to cause suffocation, as would, also (doubtless), a false membrane, the result of inflammation.

But, I do not come forward to argue that worms are the sole cause of "gapes." I do not even record an opinion, or the slightest vestige of a theory, but merely supply a fact *which is called for*, and as necessary, it would seem, as the presence of the corpse to the inquest which is to be held upon it. I would, however, deprecate exceedingly the mode of commencing a search after truth, by an utter negation of facts which I believe have been honestly and faithfully stated, and by the substitution of matter to which the old observation is peculiarly apposite—

last dozen years been familiar with the general anatomy of Zoophytes and Annelida, in the prosecution of researches in physiology, aided by the best microscopes of Ross, Powell, Oberhauser, and Nachet.

Under these circumstances, having mounted one of the worms in spirit (as a "preparation" for my cabinet), I ventured to make a careful drawing of it, with the aid of the camera lucida, as I saw it, when magnified about thirty diameters, and this drawing I venture to forward to you with this communication.



"That which is true, is not new, and that which is new is not true."—JOHN ANTHONY, M.B., *Cantab, Washwood, near Birmingham.*

CEDRUS DEODARA STANDING THE SMOKY ATMOSPHERE OF A TOWN.

It was with fear and doubts, that four years ago I planted several of the above in my garden, which is about half-a-mile from the centre of a large manufacturing town, feeling a great apprehension that the smoke would destroy them, I am, however, happy to say, that such is not the case; they are, indeed, doing better than almost any other evergreen in my garden. I thought, perhaps, some of your suburban subscribers, about to lay out their grounds, might be glad to know this, I therefore venture to send my own experience. I may also, add, that the *Araucaria imbricata* does equally well.—CIVIS.

THE COTTAGE GARDENER'S PONY.

(Continued from Vol. x., page 471.)

"The law of the road is a paradox quite,

As you're driving your carriage along;

If you keep to the left, you will keep to the right,—

And when you go right—you go wrong."

DRIVING, like reading and writing, is supposed to come by nature. No treatise on the subject ever yet fell into my hands, although more good horses are ruined by thoughtless drivers than by hard work.

There is a tendency to pull harder with the right hand than the left, yet there is no safety unless the left rein, that which passes between the thumb and fore-finger of the bridle-hand, is kept constantly just on the stretch, while the right rein, threaded between the middle and the fore-finger, may be tightened or slackened occasionally by the right, or whip hand, in crossing the road, turning, or avoiding any object: hence those significant expressions—"having him

under your thumb," or "having the whip-hand of him." A very very slight reminder with the whip will reach pony's attention when he is not keeping the (left) rein at stretch, or when any occasion requires him to alter his course in obedience to the (other) rein. A high-mettled steed, with a supersensitive mouth, and touchy skin, will resent all such practical hints, and will be ready to "turn about, and wheel about, and jump Jim Crow," on the very slightest notice, as my honourable and public-spirited friend, his master. But our pony, true to his order, has a skin thick enough to prevent him from taking any offence when none is intended; so that you do not tease him, nor ever use the whip without contriving to make the reason why clear to his comprehension, he will soon learn to obey a good-humoured hint, or "aid," as it is called. It is in vain to expect extreme delicacy of mouth in a pony.

Do not sit bolt upright in your seat, holding tight by both reins, and keeping your nag at work by constant touching-up. Going-up hill, it is better to encourage him with your voice than to flog hard, for fear lest, by a sudden rush, he should injure his wind. When he starts aside, no more of a reminder should be administered than to make him go up to his bit and obey it. Always keep a strict watch upon the play of his ears.

I generally use a snaffle, or drive from the ring of the curb; if there be occasion to have the reins attached lower down on the bar, I use a leather strap instead of a curb chain. Having great confidence in the excellent fore legs and feet of my nag, I generally let him have his head, and walk freely at first on descending hills, not letting him bear in hand until he either begins to pick his way, or till he finds it uneasy to hold back the carriage without going faster. Hard-driving down hill, with a light cart, may bring you a little sooner to the end of your journey, but it is at

the cost of a heavy mortgage on the fore legs—the most valuable part of horse property.

The trot is not so good a pace for a pony as the walk, though he should do, his mile in about eight minutes. I usually let him walk one or two miles in the hour, according to the road or the weight. Next to the walk he excels at a hand-gallop. More work is to be got out of one hour, at an average rate of five miles an hour, a little more or less, than at any other speed.

I have no doubt that in time the whip will be entirely given up on the driving-box and in our public schools, and in the army and navy. The voice, so far as the pony is concerned, is far the safer and more reliable means of enforcing command; but I despair of carrying more than half of my horse reforms, and, in the meantime, I must beg that the whip be used considerably. When punishment has to be inflicted it should be done decisively, and so that it may be remembered, but never in a passion. The best discipline, however, is always where there are fewest punishments.

In making a pony's mouth, I leave him to the breaker, only seeing that the breaking-bit is not wriggled altogether to one side, which is easily managed by looking early to it. If you unfortunately get a horse with his mouth tender on one side only, it becomes needful to have one corner of your bit wrapped either with soft cotton or light wire until it is righted. As soon as the pony has got anything of a mouth, I at once put the breaker into the groom's place, and make him go through all the routine of my work for some weeks, Caleb Balderstone being the lord for the time. This greatly diminishes the cost of breaking, which is a consideration; besides, I believe the best way to learn to do any sort of business is to get fairly in harness as soon as possible. So much for the mouth and breaking-in, written at the instance of a correspondent.

Since pony came up from his summer's run in the paddock, or his long vacation in the aftergrass, which has been unusually prolonged on account of the price of oats,* he has got, as we will suppose, a very rough coat, looking quite as zoological as an alpaca. If it is to trot about much this winter in the miry roads all this will encumber him sadly, make him cough, and puff, and snort. (Though if he has to work only in the fields it will not inconvenience him much.) Many advise to have a good deal of long hair singed off; and, from my experience, I should say it is best to be done with a coarse-haired one, but not with a thin-skinned one. It expedites the natural process of moulting; gives great relief to the animal's system, as he is rather feverish when first kept in-doors; seems to be very agreeable to him; and saves nearly an hour a-day to Caleb. Pony should be very little singed about the nose, ears, or throat; only once over the body, and twice underneath, and over his legs and arms. A small quantity of simple, cooling medicine may be given at the same time. The object is to protect him from damp, and to help his condition and wind. It is curious, however, that we should begin to cherish our own beards and moustaches, and singe off our horses' coats at the same time!

Since these very small and unpromising pony essays of mine were commenced, I am glad to have noted so many gallant efforts, more or less in the same direction. We have had an excellent set of hints from Abdel Kader, on the natural treatment of the Arabian horses. A cavalry officer has come out strong on the false system of overgrooming our troop horses, and saddle horses generally; and the poor Lord Mayor's show has elicited a torrent of eloquence on needless displays of equipage. But, seriously, I think a Lord Mayor's show, as a show once in a year, is a very fine thing, and that there ought to be one. If many, or any, of our 'honourable friends' chose to read themselves a lesson from the Lord Mayor's show, and just ask themselves whether their own equipages are not too cumbersome and portentous by half, taking much more valuable and bigger horses to set them a-going than the fitness of things requires, the Lord Mayor's show is a very good thing in that point of view too. And then, what I have endeavoured to do for the 'carriage,' another utilitarian is essaying about the 'cottage' itself, and the pigeon is to be made

* *Mem.* We must cultivate an acre or two of oats this year, and consult Mr. Blundell anent it.

decent, and brought out in good society along with the pony. I will conclude, at least for the present, with the following homely rhymes. The first is called "The Horse's Prayer;" and the second contains a scarcely less touching appeal to certain feelings I should wish to see rather more practically expressed—

Up hill spare thou me;
Down hill take care of thee.
On level ground spare me not,
Nor give me water when I'm hot.

The Protestant flogs me, and gives me no grass;
The Catholic tires me with riding to mass.
But now I have come to the hands of a Quaker,
And I can roam over a rood and an acre.

POULTRY-YARD REPORT.

If the report of my poultry-yards be of sufficient moment to be admitted in your very useful publication, I beg to place it at your disposal. I have several varieties; each variety is kept separate. The following, may, therefore, be considered a correct statement of the cost and produce of one hen of each sort, from the 1st of April to the 30th of September, both inclusive:—

VARIETIES.	NO. OF EGGS.	WEIGHT.	COST.
		Ounces.	s. d.
Bantam	51	76	1 1
Black-bearded Pole	60	167	2 4
White-crested Pole	89	190	1 8
Cochin-China	62	125	2 9
Dorking	48	109	2 8
Golden-spangled-Hamburgh..	119	297	2 2
Silver-pencilled-Hamburgh ..	84	148	1 6
Spanish	78	224	2 6
Total	591	1336	16 8

Several of my Cochin hens have sat three times this year, while the Dorking hens only sat once, the Bantams twice. The others are non-sitters. I should mention, in reckoning the above cost, the average has been taken including cocks, but it is merely my actual outlay for corn; green food is supplied from the garden; rent and expenses of looking after the poultry is not taken into account; the last-named item is more than compensated for by the pleasure of superintending them. At the present high prices, the cost would be from ten to twenty shillings per year more than shown above, still, the cost of the eggs is very small, the average being a fraction under three-farthings each, or four Bantams, or four-and-a-half Golden-spangled Hamburgh eggs cost only one penny. The winter keep has to be added, but then the eggs will be under one penny each, as some will be produced during the next six months. Should the foregoing meet approval, I shall be happy to communicate other information.—B. P., *Shoreham*.

THE CULTURE OF A ROOD OF GROUND.

DECEMBER.

This being the closing month of the year, but little is to be done in the way of sowing and transplanting, yet there is much work to be attended to, when the weather permits, in digging and trenching all vacant ground; it being very important, at this season of the year, that every advantage should be taken to prepare the soil for future crops. If the weather should be frosty, and the ground too hard for the spade, let the manure be carried to the plots that require it. This is the proper time to trim and repair fences where required, and to cleanse the ditches, the emptying of which will make a valuable addition to the manure-heap. Leaves should be carefully collected at this time, as they are now rapidly falling from the trees. In some localities, where woods abound, a very large quantity might be gathered with

but very little trouble, which would make excellent litter for the pig, and even the cow, besides making the best of manure. I have often been surprised that this matter has not been more attended to by cottagers. I know well, from experience, the value of them as a manure, besides their use for litter, and instead of their being a nuisance, in blowing about the roads, and laying ankle deep in plantations, they would prove of great value to those who have leisure to collect them, and are not too indolent to do so. When I kept cows, and grew but little straw, I have collected nearly a sufficient quantity of leaves to bed them down the whole winter.

Where a portion of a rood of ground is cropped with *Wheat*, it should be carefully watched at this time, to see if the mice are getting it, which they are very apt to do just as it is making its appearance above ground, which I find to be the case with mine at this present time. The best method of destroying them is by setting brick-traps to catch them; the mode of setting the traps is very simple,—the plan is by placing a board flat on the ground, and set a single brick (or flat tile) on one end, a little slanting, and then support it with three sticks, in the form of a figure of four, with a soaked bean or pea fixed on one end of one of the sticks for a bait, which, as soon as the mouse touches, the brick will fall and kill it.

Since the publication of my pamphlets on Spade Husbandry, Pigs, &c., I noticed a report in *THE COTTAGE GARDENER*,* of a tool which struck my attention as being a very useful one, and, to the best of my recollection, it was called a mule, meaning, I suppose, that it was something between a fork and a spade. The description of it was so simple, and the cost so trifling, that I was induced to have one made to try the effect of it. The following is a description of it:—Having an old three-pronged fork nearly worn out, I had a plate fixed on the end of the prongs, about five inches wide at the bottom, and about five inches deep, so that the upper part being left open the same as when a fork, only being narrower at the bottom than at the top. I find this tool to be very useful to dig with where the soil is of a very stiff nature, and where the fork cannot penetrate; and the great advantage it has over the spade, is, that however moist the ground is this tool never clogs, the top part being open the same as the fork. Having found this tool of great service I have ventured to recommend it; but, in conclusion, I must not forget to mention that I have a *long handle* to it, the same as I have to my digging-fork, having a great objection to the back-ache, besides, in using the long handle, I find I have a greater power in lifting the soil. The particulars of the advantages I have found in using a long-handled tool, the make, &c., I have given in my little work on Pig-feeding, &c.

RICE BREAD.—Having noticed the economy of using rice with flour in making bread, we were induced to try the experiment, and having found it to answer exceedingly well, and finding a great saving, I have ventured to give the result of our trial, thinking it might be of some little service to cottagers with large families, at the present time, bread being at such a high price. The following is the way we used it:—One-and-a-half pounds of rice put into a gallon of water, and stewed till it becomes quite soft, then mix it, while warm, with fourteen pounds of flour, and at the same time add a tablespoonful of salt, and the usual quantity of yeast. Let it stand to rise, and then make it into loaves and bake it in the usual way. We have found the above quantity of flour and rice to have made us twenty-eight pounds of excellent bread, and, independent of the great saving, we like it better than bread made in the ordinary way.

BEES.—We have been feeding our light stocks of bees with the loaf-sugar and honey, as noticed in my notes for last month, and find it to answer well, and they appear to take it with as much avidity as though it were all honey, and in consideration of honey being so scarce and expensive we find it a great saving. JOHN SILLETT.

* An engraving of this tool was attached to the account given in *THE COTTAGE GARDENER*; the exact date I cannot recollect, but I think it is some three or four years since.

COTTAGE BREWING.

(Continued from page 108.)

NEXT in order, comes the fermentation; the placing of the tub for which purpose should be carefully considered. It must be away from cold draughts, and close to the cask intended to be filled. Tilt the tub, by placing something for the edge of its bottom to rest upon, and then pour into it the five or six gallons of beer previously set apart to cool. Plunge the thermometer in the beer, which must be lowered in temperature to 70°, at the least. This (milk warm) is the proper point of heat to apply the barm, which must be thoroughly mixed with the beer; then place the lading bucket, with its handle inverted, in the midst of it, and this will be found to expedite the fermentation considerably, as it invariably begins in close contact with the bucket first. Separate *double* the quantity of beer, just set to work, from the cooler into the small tubs, to be added to it in about an hour-and-a-half, when, if all is as it should be, a white head,—in brewing parlance, called the *helvet*,—will have formed upon its surface; be very particular as to this; until the *helvet* is perfectly formed over, do not add more beer, otherwise fermentation may be checked in the beginning, and the working prove precarious afterwards. Let this formation of the *helvet* act as a guide for future additions; each time you do so, separate more beer to cool, and each time double the quantity. Until the working tub.

The boiling period for the beer in the copper having again expired, strain its contents through the sieve, &c., as before, and take the hops to the manure-heap; reserving a double-handful, or so; spread these to dry, and see that they do not become mouldy: for what purpose, anon; clean the slime from the copper, and fill it with water, to become heated for washing-down the brewhouse, or other purposes. If the beer in the coolers become too cold before it can be all got together, warm a portion, and enter it to the working-tub at its proper heat. All prospering, the beer will be ready to tun before bedtime (viz., supposing the brewing to have begun the evening before); previous to which operation, make sure that no piece of cork, or other extraneous matter, remain within the barrel, for, should this be the case, it might stop up the working-hole, and prove a difficulty.

Place the cask to be filled firmly and level on a skeleton tram, elevated a foot or so from the floor, so that, by a free circulation of air beneath, it may be preserved from damp and injury; drive two new corks—one below, the other in the centre of the barrel; secure a working-tube in the top hole; fasten in the vent-peg; adjust the tun-pail in the bung-hole, and the vessel is ready to fill. When the cask is about three-parts full froth will issue from the working-tube; place a tub to catch it, and continue filling until beer is perceived to escape; then remove the tun-pail; lay a piece of hop-bagging, about six inches diameter, over the bung-hole, and fasten down the bung to a degree that will ensure its removal with a good tug; remove the tub from under the tube, and put an empty one in its place; pour what beer and froth the former contains into the working-tub, and retire to rest for five or six hours; contrive then to awaken, or request some one to arouse you, as the beer will, in all probability, require your further attendance. If by that time you perceive it has not long began working, do not interfere with it; but if it shows *no* sign, it will be necessary to jog its memory a little. I never but once had a bad case of this description, still, as there is no telling what may happen, it is well to be provided with a remedy, so far it lies in one's power. Take a large double-handful of flour, place it on a plate before a fire, stir to prevent its burning; grate about an ounce of ginger, mix, and when quite dry and hot, enter it by degrees, with your left hand, in at the bung-hole; stir round about with a walking-stick quickly with the right hand, so as thoroughly to conglomerate the mass, and, doubtless, it will soon return from the error it had made. But we will not suppose this to be our case in the present instance, therefore, after five or six hours' sleep, rub your eyes, slip on something slightly, for the cask will merely require attendance a few minutes, to fill it up from the working-tub; adjust the tun-pail, and continue to fill until beer escapes from the tube, &c., and do this at intervals of every two or three hours during the

time that the beer works briskly. Draw the tub with the first workings aside; allow them to *remain in it*; shift another tub in its place, and adopt this proceeding each time, while the working goes on with spirit; by so doing, the barm will have time to settle, and the beer will run clear away from it when required. When the beer in the working-tub is exhausted, run that from the barm in the small tubs; prevent the yeast escaping by placing a whisk at the edge of the tub,—a comparison for which, do not fancy that of our mother's, which erst frowned with threatening aspect from the mantle-shelf, but rather our old school-master's very best and substantial birch rod! our mother's machine though was mere moonshine; quite as little applied to the purpose for which it was intended, as one would now think of using *such* an apparatus for separating the beer from the barm. The froth and settling which remain in the first tub had better be thrown away; it is dark-coloured, intensely bitter, and if reserved to add to the barm, it will not only serve to unite these disagreeable qualities, but everybody who may have the misfortune to bake with it will eat bitter bread. As you subsequently separate the beer from the barm into a small tub by itself, yeast is generally the perquisite of the brewer, do not sell it too thin, or the housewives will convene sundry palaverings detrimental to good fame.

If, perchance, a deficiency of new beer should occur, draw some from the small beer cask you may have in tap to assist you; but if there remains a few gallons to spare, add it to the small beer, or otherwise preserve it in the small six-gallon cask. On the second day, fill up the last thing before going to bed, and the first on the following morning; for our humble brewing this will not probably require repeating. When quite done working, remove the tin tube and drive a new cork in the place of it; pour some beer gently in at the bung-hole to fill up the barrel sufficiently, adding, at the same time, the hops previously dried; then, with a pail of warm water and a flannel, clean the barm from off the cask, and wash the bung and piece of hop-bag; dry the latter, to be in readiness when their time comes; leave the bung-hole unclosed about ten days, then take out the vent-peg, place the hop-bag and bung, and drive it down with a mallet, so as to be perfectly air-tight, leave the vent-hole open a fortnight, then close it, and the thing is completed.

Ale should not be broached before it is six months old, at least; and then, if the cork is a large one, it would be advisable to tap it at the centre cork first; the beer will be so much the more likely to draw off fine the further the tap is situated from the bottom. Apropos to fine beer; if required for consumption soon after brewing, proceed, a week after it has ceased working, to rack it; force in the cork at the bottom of the cask, and allow the beer to escape into a cooler, tilt the vessel when it begins to run slow until grounds are perceived to escape, then untill immediately, empty the grounds from the barrel into a pail, and strain them through a funnel-shaped flannel bag, rinse out the cask with cold water, drive in a tap to *save* a cork, and return the beer into it without loss of time; when the froth has subsided, add a handful of hops, bung it down, and in two or three days the beer is ready for use.

Clean, scald, and dry the utensils, and thoroughly cleanse the cellar; should the latter be free from damp, the tubs, &c. may find a place there. If the contrary, stow them where it is most convenient; preserve and prevent their falling to pieces, by covering over with some old carpeting, or something of that sort, to exclude the air from them. Of course, the utensils would be benefited by being painted on their outside. A cellar is always preferably situated underground, by reason of which, it is warm in winter and cool in summer. We cottagers cannot often command such a site, but, wherever it may be, an even temperature is desirable; frosts and strong light should be avoided, and gleams of sun zealously excluded, as from a dairy.

Finally, John Barleycorn, in a moral, social, and even fiscal point of view, I wish you well. This wreath that I have woven for your honourable brow, is far, very far, from my wish to have you coupled with idle drunken sots, who disgrace you, and, both for town and country, are disgusting bad subjects, and a nuisance, though, to be sure, I need hardly fear so base a connexion, for your pure decoction, such as I have pointed out, will, of course, never be found at

the "Tom and Jerry" shops where such worthies associate; those sinks of iniquity, in the way of the farmer, of the clergyman, squire, and of every other man with his heart in its right place; to the poor man a curse, and the cause of more distress for him than all the taxes, competition, and variableness of the weather enhancing and acting upon the price of provisions put together; sources of corrupt and illicit acquaintances, where crime of all kinds is propagated, and where every species of vice united to the category of evil abound, offering no other recommendation, that I can see, but for the brewer and occupier alone; for surely, an exchequer filled by encouraging such masses of crime can never be said to benefit the country. But the remedy lies with ourselves; sobriety and self-respect is the panacea, and may the day be fast approaching, when the majority of my fellow-working men may be found exerting self-control sufficient to allow a barrel of home-brewed beer to remain upon their premises, with benefit for themselves, and comfort for their wives and families.

DIGEST.

ALE.

Quantity to be brewed	50 gal.
Ditto of water required	94 gal.
Ditto of malt	4 bus.
Ditto of hops, if beer is required for keeping over twelve months	4 lb.
Ditto if required for keeping over 6 months	3 lb.
Ditto of barm for working	1 qt.
Heat of water for first mash	170 deg.
Ditto second ditto	180 deg.
Time for water to stay on each mash	3 hrs.
Ditto for boiling the beer each time	2½ hrs.
Quantity of beer to begin working	5 gals.
Proper heat to set beer to work	65 to 70 deg.

Times for brewing, October and March.

TABLE BEER.

Quantity to be brewed	50 gals.
Ditto of water required	85 gals.
Ditto of malt	3 bush.
Ditto of hops	2 lbs.
Ditto of barm for working	3 pints
Heat of water for first mash	170 deg.
Ditto second ditto	180 deg.
Time for water to stay on first mash	3 hrs.
Ditto second ditto	2½ hrs.
Ditto for boiling beer each time	2 hrs.
Quantity of beer to begin the working	5 gals.
Proper heat to set beer to work	80 deg.

Times for brewing; when wanted.

UPWARDS AND ONWARDS.

THE CARRIER PIGEON.

(Continued from page 132.)

"THE original of these Pigeons came from Bazora, in Persia, being sometimes brought by shipping, and sometimes in the caravans; hence, by some ignorant people, they are called Buffories.

"This city is situate about two miles distant from a river called Xat Arab, which is formed by the meeting of the two great rivers, Tigris and Euphrates; near this place is a small house, like a hermitage, dedicated to Iza ben Mariam, that is, Jesus, the son of Mary: in passing which place, the Mahometans themselves very devoutly offer up their prayers; there is likewise a considerable quantity of land whose revenues belong to this chapel.

"We come now to give an account of the name which is given to this pigeon, and it is called a Carrier, because it is frequently made use of to carry a letter from one place to another. And such is the admirable cunning or sagacity of this bird, that though you carry them hoodwinked, twenty or thirty miles, nay, I have known them to be carried three-score or a hundred, and there turned loose, they will immediately hasten to the place where they were bred. The Dutch call this pigeon Bagadat, I suppose from a corruption of the name of the city Bagdat, which was formerly old Babylon which Nimrod built, because they judge this pigeon in its way from Bazora to be brought through that city.

["GIRTIN, p. 65. The winged messenger no sooner finds itself at large, than its love for its native home influences all its motions. It immediately flies up into the clouds to an almost imperceptible height, and then, with great certainty and exactness, darts itself, by some unknown intuitive principle, towards its native spot, which is frequently at the distance of many miles, bringing its message to the person to whom it is directed. By what visible means they discover the place, or by what compass they are conducted in the right way, is equally mysterious and unknown; but it has been proved, by experiment, that they will perform a journey of forty miles in the space of one hour-and-a-half, which is a degree of dispatch three times sooner than the swiftest four-footed animal can possibly perform.]

["GIRTIN, p. 66. Extraordinary attention was formerly paid to the training of these pigeons, in order to be sent from governors, in a besieged city, to generals that were coming to succour it; from princes to their subjects, with the news of some important transaction.]

"In Turkey they call them Bagatins, or Couriers, and the Turks and Persians make a common practice of breeding this sort of Pigeons in their Seraglios, where there is one, whose business it is to feed and train these birds for the use afterwards designed, which they do in this manner: when a young one flies very hard at home, and is come to its full strength, they carry it in a basket, or otherwise, about half-a-mile from home, and there they turn it out; after this they will carry it a mile, then two, four, eight, ten, twenty, and so on, till at length they will return from the farthest parts of the kingdom. This practice is of admirable use; for every Bashaw has generally a basket full of these pigeons sent him from the grand Seraglio, and in case of any insurrection, or other emergent occasion, he braces a letter under the wings of a pigeon, whereby its flight is not in the least incommoded, and immediately turns it loose, but for fear of their being shot, or struck by a hawk, they generally dispatch five or six; so that by this means dispatches are sent in a more safe and speedy method than could possibly be otherwise contrived.

"N.B.—If a pigeon be not practised when young, the best of them will fly but very indifferently, and may very possibly be lost."

["GIRTIN, p. 67. In the East, they formerly kept relays of these Pigeons in constant readiness to carry expresses to all parts of the country. When the Governor of Dalmatia heard the news of the death of Orillo, he let fly a pigeon, under whose wing he had fastened a letter; this fled to Cairo, from whence a second was dispatched to another place, as was customary, so the death of Orillo was made known to all Egypt in the space of a few hours; but the simple use of them was known in very early times. When Modena was besieged, Brutus, within the walls, kept an uninterrupted correspondence with Hirtius without, and this by the assistance of pigeons, setting at nought every stratagem of the besieger, Anthony, to stop these winged couriers. In the times of the Crusades, there are many many instances of these birds being made useful in the service of war. Tasso relates one during the siege of Jerusalem; and Joinville another, during the crusade of St. Louis."]—*Eaton's Treatise on Domestic Pigeons.*

TO CORRESPONDENTS.

. We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

MERITS AND DEMERITS OF VARIOUS PROTECTING MATERIALS (B. B.).—By referring to No. 265, page 59, and onwards, you will see what Mr. Fish says on this very subject. He did not, however, feel competent to express an opinion upon *Frigidomo*, either as to its power thoroughly to keep out frost, and preventing a change of temperature beneath it, even when wet; as its makers tell us it really does; nor how long it might last. If half what the advertisements say be true, it must be valuable; and to satisfy many friends, we should be glad to receive some definite information concerning it from those who have tried it long enough to be able to speak from practice. Perhaps the article our correspondent of last week thinks he has invented will be best and cheapest of all. However, we should like to know more about *Frigidomo*. We would not advise you to fasten it on inside your glass, however light, it must darken a house or pit.

LOCALITY FOR A DAIRY (H. S. Shrawby).—We cannot advise any

one as to a place of habitation. If we were on the look out for a place such as you require, for supplying eggs and butter to London, we should go first to look about the Crystal Palace at Sydenham. You will find our charges for advertising reduced in accordance with the remission of the advertisement duty.

ROCKWORK (Lora).—Our correspondent wants "some artificial rock-work for the pedestal of a fountain in a conservatory; the water will not touch the rockwork." Now, if we were allowed to add a capital F. to this name, we might hit upon something handsome, and durable, and very cheap, that we could recommend with confidence, but the whole thing, name and all, is so different from what we are used to, that we shall be glad to receive suggestions from some of our readers.

BEARDED GOLDEN POLANDS (A. B.).—The Poland have been so inter-bred in this country, that we should advise you applying to some of the London dealers who import these birds from the south of France. A full detail, however, of the characteristics of the Bearded Golden Poland, would occupy more space than could be here granted, but all that you require will be found in the "Poland" article of the "Poultry Book." In form, the cock should be robust and full; the crest, beard, and tail ample; comb and wattles diminutive; legs bright blue. The hen has the usual feminine reduction from the figure of her consort. The ground colour in both sexes should be a rich golden bay, regularly, but not too heavily, spangled with lustrous black; in some instances the regularity of these markings approaches the character of lacing, especially on the wing-coverts. The more uniform the markings on the hen the better; but the crest, hackle, and saddle of the cock, are bright orange, while shades of dark brown are interspersed with the golden bay of the body; so that the spangle is seldom so distinct as in the female. The tail should be richly bronzed, and the wings barred on the greater coverts. An admixture of white in the crests of both sexes has not, hitherto, been thought objectionable, though it seems to us to convey a mealy appearance. There can, however, be no question as to the good effect of an entirely white crest, were that attainable.—W.

BEES.—A. enquires—"What are the immediate effects of the loss of a queen under the following circumstances:—1st., When a young queen, the undisputed sovereign, is lost during her absence from the hive? 2nd., When the young queen dies in the hive before she has deposited any eggs? 3rd., When the old queen dies during winter, at a time there is no infant brood? and 4th., When she dies of old age, leaving a successor about to be hatched, or already at liberty? Under this last head, a most remarkable observation was communicated in THE COTTAGE GARDENER of December 16, 1852. I would also enquire, though I am aware the hypothesis is a startling one—Do the bees, under any circumstances, through an aberration of instinct, or what might be considered a high development of instinct, destroy their own queen?" In replying to "A's" first question, which must allude to a cast, or second swarm (for the queen of a prime swarm does not leave the hive), it may be said that great confusion immediately ensues, and which ends in the bees leaving the hive, and joining their parent or some other stock. To his second question, the same answer may be given. At what time, precisely, the third occurs, it is impossible to say, for there is nothing observable in the bees to indicate it; but, as the spring advances, a general apathy amongst them may be observed—little or no pollen is carried into the hive; and, by little and little, the bees waste in numbers till none are left; or, not unfrequently, they take the advantage of the first warm day to leave the hive in a body and join another stock. Neither is an answer to the fourth to be ascertained; for during the change of queens in this manner all is peace and quiet. As to the bees destroying their reigning queen, it is a thing, of all others, the most improbable. Supernumerary queens, it is well known, are always destroyed by the bees as soon as the last swarm for the season has left the parent hive.—J. H. P.

BEES.—"A Lady, having taken the honey without destroying the bees in a hive, wishes to know when she ought to commence feeding them, and what food to give?" If the bees are alive, which is very doubtful, begin to feed immediately: give the following—one pound of loaf-sugar, one quarter-of-a-pint of water, and one quarter-of-a-pound of honey simmered together over a slow fire till the sugar is melted; give each hive a pound of this syrup per week; feed at the top of the hive, but not during severe frost.—J. H. P.

CANKER, OR PUTRID SORE THROAT IN PIGEONS (S. J.).—Mr. Eaton says—"With regard to cure: take half-an-ounce of burnt alum, half-an-ounce of gunpowder, a gill of best white wine vinegar, and mix them well together; take one of your pigeon flight or tail feathers, that you find in your aviary or loft, and anoint the part affected inside the throat twice or thrice a day. I do not object to raising the scurf, and cause it to bleed a "very" little, where it can be got at, believing it more effectual. I am aware there are fanciers who object to this, believing it searching enough without; you can try it without, and if it does not succeed, then raise the scurf a little. Although "S. J." only requires, in his letter, to know the cause of the young ones in the nest being attacked, and the cure, if possible, as I am on this subject, I think it will not be altogether out of place to mention, that old birds are not free from canker or putrid throats where fanciers are not clean in the keeping of their birds. It does not arise from soft meat in the old birds, but from dirty food and stagnant stinking water, which a fancier ought to be ashamed to let them have. It attacks the old birds in some way different from the young. It commences its attacks about the mouth and beak, but will ultimately reach the throat, if not prevented. I believe, where old birds that have young ones to feed, are fed upon beans, putrid sore throats less take place. I had a young Almond, a very beautiful, small bird, brought it down to learn to feed itself, gave it best tares and water, it would not eat, had to put it up every night for a fortnight to old ones, as I supposed, to feed it; in about a quarter of an hour after was surprised how it was crammed, beginning to see fear lest it should get out among the flyers and be lost, determined to watch the birds, as I supposed, that fed it so well, if possible to take them down, also put the young pigeon down; to my surprise it flew over to the bean hopper, and eat the beans as fast as any of the old ones, while it would not eat tares. I believe Almond and short-faced birds will eat beans if brought up young to it, and it is the best food that can be given to Pigeons, and prevents diseases.—M. EATON.

DELPHINUM SINENSE (J. S. K.).—Any seedsman in the principal towns throughout the kingdom sells seeds of the Chinese Larkspur. Sow

it at the beginning of April in heat, and out with it as soon as it is up; plant it out on a rich piece of ground in May, and it will soon be in bloom; then select the best colour, and mark the plants. Keep them like so many *Salvia patens*.

WHITE MOSS ROSE (*Ibid.*).—The white Moss Roses are quite as hardy as the red ones, but some of them are not so strong in constitution.

CHILD'S NIGHT LIGHTS (*Ibid.*).—One or two of them "in a frame in saucers," would, probably, keep out slight frosts; but we fear the gases they would emit would be injurious to the plants.

PLEROMA ELEGANS (*T. C. jun.*).—*Pleroma elegans* is a plant that requires, through winter, the warmest part of the greenhouse, and should have but little water through that season; only just enough to prevent flagging. Then, in spring, give a good shift in a moderately rich compost; grow it liberally; and about the 1st of July give it a check, by setting it out-of-doors for a short time in a sheltered spot; it will there set its blossoms, and should be brought into the greenhouse again to bloom. To make it bushy, it should, when growing, be frequently stopped. The plant you mention is *Vriesia splendens*. It is a plant rather new, and allied to *Bilbergia*, from which genus it has been separated. You will find it a most beautiful plant when it flowers.

ORCHIDS (*K. L., County, Dublin.*).—You have had the misfortune to lose the blooms of your Orchids, and ask the following questions:—1. When a plant shows flower, ought it to be left in the same house; that is, if it be in a hot, damp house, should it be removed to a cooler one? That depends upon the kind of Orchid. If it be from the East Indies, No! only remove it to the cooler end. If a *Cattleya*, or other genus, from America, Yes! 2. Supposing the plant to be at rest in the cool house, and kept dry, should it show flower, what treatment should be adopted? If the roots are (as they should be) alive and growing, give a little water, and increase the heat five or ten degrees. 3. *Cattleya crispa*, *Oncidium luridum*, and *Epidendrum cochleatum*, are in a moist house, day temperature 75°; they all are showing flower. What should be the treatment? Give a drier temperature, and a few degrees less heat, or the flower-shoots will damp off. 4. Is the outward air at this season injurious to plants at rest? That depends upon the state of the external weather. Should a mild, sunny day occur, a little air may be given for an hour or two, about midday, but if frosty, or foggy, or wet, the outward air, if admitted, will do mischief.

DISEASED SHANGHAI HEN (*Argus*).—The hen described as in moult, broody, very weak, with no appetite, and walking irregularly, frequently crouching down, is most probably suffering from a severe disease of some important internal organ. Cramping in disease can never be beneficial; when the digestive organs are able to act there is always an appetite; when unable, cramping must increase the mischief. Imagine cramping a man in a fever, and think what would be his chances of recovery. It is difficult to prescribe for an obscure case, like the present, without seeing the bird; but warm, dry housing, varied soft food, and a little chopped meat, seem very desirable.—W. B. TEGTMEIER.

DISEASED EGGS (*F. W. S.*).—The eggs described as being of an offensive character, cannot, I should imagine, owe their peculiarity to the birds eating the fruits of the Portugal Laurel, but depend, probably, on some unwholesome article of animal food. I write, however, under correction, as I have never had any opportunity of examining such a case; and if "F. W. S." could conveniently forward one or two of the eggs to town, I would gladly send for and examine them. The fruit of the Laurel contains a small portion of prussic acid, but this poison is a direct sedative, and unlikely to produce the effects described.—W. B. TEGTMEIER, *Tottenham, Middlesex.*

FIRST-RATE JACOBIN AND BALD PIGEONS (*H. W.*).—In the first place, *Jacobins* ought to be small birds; and the smaller they are the better. There was a time when they were considered smaller than the Tumbler. The feathers that form the hood, the closer the better, also closer to the head the better; to have a very short beak, and a clean pearl eye, a clean white head, white flight, and tail. With regard to the *Bald*, all the properties in the Almond are to be found in the *Baldhead*, if good, except feather—viz., head, beak, eye, carriage, or shape, feather only different. They should have a clean white head, clean and clear white tail and flight. Almond Tumblers, and other Tumblers, differ in no other properties but feather.—JOHN MATTHEWS EATON.

WALL TREES (*Fructus, Saltwell*).—We are at all times glad to afford any information. Since you decline some of the trees recommended before, you cannot do better than substitute—1 *Beurre Die*, 1 *Napoleon*, 1 *Ne Plus Meuris*, and 1 *Beurre de Rome*. If you have plenty of height of wall, have the trees grafted on the Pear stock; if not, those on Quince stocks will be better, provided the soil is not too light and dry. We are no advocate for the Quince as a stock, except for wet, cold, and heavy soils. The *Newtown Pippin* will not do; plant a *Ribstone Pippin*, *Court of Wick*, or *Nonpareil*.

FRUIT-TREES (*J. H., Surrey*).—If J. H. will communicate with Mr. Hogg, by addressing to him at 13, *Giltton Road, Brompton*, he will obtain full particulars as to his enquiry.

BUDDING THORNS (*C. A.*).—We happen to know the very Thorns you write about, and every Thorn of any note from Hereford to Gloucester, by your road, and back again through Ledbury. We also know some ladies, on both roads, who bud Roses, as you do, and for their sakes we are loth to lead you into a thorny path. Some people are so fond of trifling away their time, that they go on, from year to year, putting buds of new Thorns, here and there, on old heads, but they never come to much good. If you are really in earnest, "behead" the trees by all means, and just now is a good time, but give up the idea of working them yourself; to climb up a ladder and get your dress entangled in these Thorns, of an evening in June, would be an awful predicament, and no one would sympathise with you, where every third person is a grafter or budder, all over the parish. Rather ask a professional grafter to head down the trees as he would an old Apple-tree in the orchard; ask him, again, to graft them like so many Apple-trees, and about three weeks earlier than he would the apple, and where the grafts do not take,

let one of the Cherry budders from Ledbury bud them next June. There are plenty of people all round you, who seldom lose a graft or a bud out of five hundred.

ADDRESS (*H. H.*).—H. Sturgeon, Esq., Manor House, Grays, Essex.

WHITE SCALE (*Je l'ignore*).—Paint over the stem and branches of the Vine with a creamy mixture of 4 lb. of soft soap, 1 lb. of sulphur flowers, 4 oz. of powdered black pepper, and 4 gallons of water, boiled together for twenty minutes.

DAMAGED WHEAT (*Bridport*).—The wheat damaged by salt water will not injure fowls.

VULTURE-HOOKED (*T. L. O.*).—This means that the feathers project beyond the hook or knee of the bird, as they do in some of the Falcon and Vulture tribes.

POULTRY FOUNTAINS (*Ibid.*).—These, made of good brown earthenware, may be had of all sizes. At Bury, in Lancashire, one holding five pints may be had for sevenpence.

BLEEDING IN VINES (*B. H.*).—To stop this, char the surface of the wound with a red hot iron, and then rub in a paste made with a little Roman cement and water. The culture of *Pines in pots* has been treated of very fully in our back volumes. *Tanner's bark* may be used as a fermenting material, with perfect success, in forcing Potatoes, or any other vegetable. The bark requires to be in some kind of pit.

COCK OF SPANISH COCK (*R. T.*).—It ought to be upright, or erect, and without any excrecence upon it.

PINE CULTURE (*H. C.*).—Hamilton's little book is as good as any. An advertisement may bring you the plants you need. We do not know of any.

CHRYSANTHEMUMS (*E. de la T.*).—You can have the book of Mr. G. Taylor, Park-street, Stoke Newington, Middlesex.

BOX LEAVES (*Rev. B. E.*).—These are not admitted as having medical virtues by modern practitioners, but at one time they were much celebrated as a medicine in colic, intermittent fevers, &c. Oil distilled from the wood, is said, by Dr. Withering, to give great relief when applied locally in cases of hemorrhoids; and that a powder of the leaves will destroy worms.

NEWTON ABBOT POULTRY SHOW.—We are informed that no first prize was given there for *Golden-pencilled Hamburgs*, but that Dr. Rogers and Mr. W. Wivell Rowe had each a second prize.

WINCHESTER POULTRY SHOW.—When we alluded to the dark beaks of the *White Dorkings* our observation was general. Mr. Antill's were free from the blemish.

GAS STOVE FOR SMALL GREENHOUSE (*H. C., Liverpool*).—If you refer to our Index, you will find full directions for using this. It answers very well, but requires a tube to convey all the smoke, &c., out of the house.

QUERY (*Clericus*).—"A. the owner of a Buff Cockerel asks his friend B. to exchange with him for a Partridge-coloured bird of the same age for the season; B. consents; A. stipulating that each should retain their respective rights of ownership. Soon after this arrangement had been made, the Eastern Counties Exhibition was started, and one of the conditions of that Show is, that the birds exhibited shall be *bona fide* the property of the exhibitor. Now, both friends wish to exhibit the Partridge-coloured bird. Query—Who has the greatest right? The owner for the time being; or the breeder who has lent him to his friend for the season?" We think the breeder has the right to exhibit the Partridge cockerel. He only parted with him for a specific purpose—breeding—and the ownership remains with him.

MOULTING (*Wales. J. L. F.*).—The only aids to moulting that we know, are generous feeding, and warmth. Give a little animal food.

INDEX (*An Old Subscriber*).—You may obtain the Index of any volume of THE COTTAGE GARDENER from Messrs. W. S. Orr and Co. We purpose giving the Title-page and Preface in one number, and the Index in the next number, of our future volumes.

BACK NUMBERS (*R. H. C.*).—All, or any, of our back numbers can now be procured of Messrs. Orr. *Dorkings* are not such good layers as *Shanghaes*, but they are better for table use. No treatment will make old *Dorkings* lay in winter. To combine their good qualities, keep *Shanghaes* hens and a *Dorking* cock.

BIRMINGHAM POULTRY SHOW.—The total entries of poultry to be shown this year in Bingley Hall are 2,276 pens; and we understand that applications for from three to four hundred certificates have been received by the Secretary since the last day on which these forms were issued—a number sufficient alone to make up an ordinary Poultry Show. There will be 280 pens of pigeons; and this part of the Exhibition will, we believe, contain many very choice and valuable specimens, and form a most interesting and attractive feature in the collection.—*Midland Counties Herald*.

BIGARREAU CHERRIES (*Practical*).—We should fear your *Bigarreus* are worn out. You can do nothing better than apply liquid-manure to the soil during the growing season.

NAMES OF PLANTS (*Rev. R. M. E.*).—*Veronica Lindleyana*. (*E. R. S.*)—Small blue flower, *Polygala vulgaris*; the yellowish-white, *Linaria versicolor*; the white Moss, *Sphagnum patustre*.

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WEEKLY CALENDAR.

M D	D W	DECEMBER 15—21, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
15	Th	Daisy flowers.	29.106—28.983	52—37	S.W.	03	2 a 8	49 a. 3	rises.	☺	4 32	349
16	F	Wallflower flowers.	29.412—29.151	52—45	S.W.	27	3	49	4 a 24	16	4 3	350
17	S	Mezereon flowers.	29.259—29.146	51—34	S.W.	01	4	49	5 16	17	3 33	351
18	Sun	4 SUNDAY IN ADVENT.	30.208—30.026	49—31	N.E.	—	4	49	6 19	18	3 4	352
19	M		30.119—30.007	52—43	S.	01	5	50	7 26	19	2 34	353
20	Tu	Sun's declination 23° 27' s.	29.999—29.771	56—37	S.W.	—	6	50	8 38	20	2 4	354
21	W	St. Thomas.	30.053—29.925	51—34	S.W.	—	6	51	9 51	21	1 34	355

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 45.2° and 35.3° respectively. The greatest heat, 60°, occurred on the 15th in 1842; and the lowest cold, 13°, on the 16th in 1846. During the period 93 days were fine, and on 89 rain fell.

NEW PLANTS.

PHILESIA BUXIFOLIA (*Box-leaved Philesia*).

This probably hardy evergreen shrub belongs to the Natural Order of *Philesiads* and to *Hexandria Monogynia* of Linnaeus.

"Discovered in the Straits of Magelhaens by Commerson, and detected by Banks and Solander in Good Success Bay: since found to extend along the west coast of Antarctic America to Chiloe and Valdivia by various navigators and naturalists, from most of whom we possess specimens. In Valdivia, Mr. Bridges says it is called 'Pepino,' and is found at the summit of the Cordillera there, in marshy places under Alerce trees. It was long a great desideratum to our gardens, till at length Messrs. Veitch, of Exeter (and now, happily for all lovers of rare and beautiful plants, also of the King's Road Nursery, Chelsea,—late Messrs. Knight and Perry), introduced it through their collector, Mr. William Lobb, and gratified the numerous visitors of the Chiswick Flower-show, on the 12th June, 1853, by the exhibition of flowering specimens. Some authors have expressed doubts if the genus *Philesia* be truly distinct from its near ally, *Lapageria*; but however closely may be the resemblance in the petals, the truly calycine character of the short outer perianth, the erect stem, and very different foliage (much resembling *Luzuriaga*), and the monadelphous stamens, will surely keep them distinct. The species proves quite hardy with Mr. Veitch, at Exeter: it remains to be ascertained if it will prove so about London.

"DESCRIPTION.—An erect, much-branched, shrubby plant, three to four feet high in its native country. We have flowering specimens before us varying from four inches to a foot-and-a-half, much branched; branches alternate, principal ones as well as the stem naked below, cylindrical, and scaly with brown lanceolate scales at the joint; branchlets angular, green, here and there scaly. Leaves alternate, varying on different plants from an inch to an inch-and-a-half long, stalked, linear-oblong, leathery, evergreen, feather-nerved, smooth, sharp pointed, milky-green beneath, the margins bent back. Leaf-stalk articulated at the setting on of the leaf, and the leaf is often deciduous there, leaving the persistent short leaf-stalk. Flower-stalks exceedingly short, terminal on the branches, bracteate at the base of the flower. Flower solitary, drooping, large. Calyx nearly three-quarters-of-an-inch long, of three, oblong, rather blunt, imbricating, appressed sepals, concave, skin-like. Corolla two or two-and-a-quarter inches long, straight-sided-bell-shaped, petals oblong, reverse-egg-shaped, slightly pointed, bright rose-red, somewhat waxy, equal, concave, when dry veiny, the base united; each having within a hard oblong depressed gland or nectary. Stamens springing from the base of the petals. Filaments united into a tube below the middle, then free, erect, equal, a little shorter than the petals. Anthers erect, rather arrow-shaped. Ovary small, three-angled, oval, one-celled, with three short parietal placentae, which bear several ovules. Style a little longer than the stamens, rather thick. Stigma indented, the recurved margin obsolete three-lobed. Fruit an oval-subglobose, pointed berry, rough on the surface from the many seeds within."—(*Botanical Magazine*, t. 4738.)

GOLDFUSSIA ISOPHYLLA (*Equal-leaved Goldfussia*).

This genus was named in honour of Dr. Goldfuss, Professor of Natural History at Bonn. It belongs to the Natural Order of *Acanthads*, and to *Didynamia Angiosperma* of Linnaeus. This species is known in gardens as the *Ruellia isophylla*. The flowers are pale blue, with dark zig-zag veins on the tube at the back of the lobes. It differs nothing from *G. anisophylla* to the eye of a common observer, except in being more regularly leaved, and less straggling in its growth. It is a small, stove, evergreen shrub, a native of Silhet.—(*Horticultural Society's Journal*, viii. 321.)

PODOLEPIS CHRYSANTHA (*Golden-flowered Podolepis*).

A half-hardy annual, said to be a native of the south-west coast of New Holland. Its flowers are bright yellow. The genus belongs to the Natural Order of *Composites*, and to the *Syngenesia Superflua* of the Linnaean system.—(*Ibid.*)

BRASSAVOLA LINEATA (*Lined-leaved Brassavola*).

This stove Orchid was sent to this country from South America, by Mr. Warsowitz, in 1852. It bloomed for the first time at the Nursery of Messrs. Jackson and Sons, Kingston, in the June of 1853. It flowers in pairs, which spring from the root, and hang down. The petals and sepals are a very pale creamy-white; the lip, which is very large, nearly pure white.—(*Botanical Magazine*, t. 4734.)

LEPTOSIPHON LUTEA (*Yellow Leptosiphon*).

This genus is very appropriately named, *Leptosiphon*, being, literally, slender-tube, for which the flowers of the species are remarkable. This species is also known as

Gilia lutea. It was found by Mr. Douglas in California, but it has not been much in public before the present year. It is a highly ornamental, hardy annual, about six inches high. The petals are yellow, with a bright orange eye.—(*Ibid*, t. 4735.)

PANDANUS PYGMEUS (*Dwarf Screw-Pine*).

A stove evergreen spreading shrub, about two feet high.

It reached Kew some twenty years ago, from the Botanic Garden at Mauritius, but was stated to be a native of Madagascar. It flowered for the first time in 1852-3, producing only female flowers. It belongs to the Natural Order of *Screw-Pines*, and to *Dioecia Monandria* of Linnaeus.—(*Ibid*, t. 4736.)

ARTHUR YOUNG was quite right when he said, "Of all the roots which we can cultivate the *Parsnip* is the most valuable." We are the unwavering friend of the Potato, but we quite agree with another practical man, who says—"Six-pennyworth of Parsnip seed, well sowed, will produce more meals than four sacks of Potatoes; and it will not require more than one-eighth part of the ground which the four sacks will require for their growth."

We saw so heavy a crop of Parsnips taken up this autumn—more than twenty tons per acre—and we found some of the produce so excellent, that we resolved to enquire of our friends, among which we number our books; and we now place the results before our readers, as we are anxious that all of them should grow a large breadth next year, and try their value in all the modes and for all the uses we are about to recapitulate.

They are produced finer and sweeter in a temperate climate, such as that of England, than they are in warmer regions; and we find, for they are no food of modern acquirement, that the Emperor Tiberius was aware of this, for he was solicitous of having his Parsnips annually from Gelb, a German town on the banks of the Rhine (*Pliny* xix. 5). They were boiled, the stringy centres removed, and the outer or more pulpy portion served up with wine sauce sweetened with honey.

Modern housewives have found out many modes of preparing this root for table, and it has even been converted into bread. "There is a good and pleasant food, or bread, made of the roots of Parsnips, as my friend Mr. Plat bath set forth in his book of experiments, which I have made no trial of," quoth old Gerarde; but then adds this sturdy old stickler for wheaten manchets,—"nor mean to do!" Whether our readers will be equally prejudiced we must leave to their own discretion; but we can assure them that in many parts of America the pulp of Parsnips is mixed with Maize flour in the making of bread.

Every one knows the usual mode of boiling and serving up this root, but it is not so well known that it is improved by being mashed like the Turnip, and that cold boiled Parsnips are excellent when sliced and fried.

Every thousand pounds weight of Parsnips contain from 90 to 100 pounds of sugar; and it is this which renders them not only such excellent food for all our farming animals, but also such an excellent ingredient for making home-made wine. Those who have tasted good specimens of this liquor will agree with us in thinking it the best-flavoured of all British wines. That which we tasted was made according to this recipe:—

Three pounds of Parsnips, scraped clean, and cut in

thin slices, boiled in one gallon of water until quite tender; strain the liquor from them, and then run them through a sieve. Mix the pulp with the liquor, and to every gallon add three pounds of moist sugar. Boil for three-quarters-of-an-hour, and, when nearly cold, hasten fermentation by putting in a yeasted toast. Let it remain for ten days; take off the yeast, put the liquor into the cask, and as it works over continue filling it up with sugar and water. When done fermenting, bung down the cask, and keep it for a year before bottling. The Parsnips should be used fresh from the ground, and the water should boil before the slices are put into it.

We have also seen directions for making Parsnip marmalade, and Parsnip beer, but we cannot, at present, refer to this household lore; but we can attest that pieces of Parsnip, boiled until tender, and then put into ginger syrup, have been accepted as very superior "preserved ginger."

In making bread with Parsnips, we are informed that the proportion should be one pound of grated Parsnips to two pounds of flour. *Dumplings* may be made by adding one pound of flour to two pounds of grated Parsnips; and a flavour may be given with anything, such as cinnamon or lemon-peel.

The relative fattening and nutritious powers of Parsnips and Potatoes are shown by the following table; and we may add, that in practice, Parsnips are found to be much superior to the other root for feeding stock. In every 100 parts of each are found the following constituents:—

	PARSNIPS.	POTATOES.	
Water	79.4°	75.5	
Starch and fibre	6.9	19.0	
Gum	6.1	6.8	} Fattening.
Sugar	5.5	3.3	
Albumen	2.1	1.4	
			Flesh-producing.

Lastly, but most importantly, arises the query—What is the best mode of culture? The usual routine is found in our works on practical gardening and farming, but, knowing how largely they cultivate the Parsnip, and how excellently they succeed in its culture in the Channel Islands, we wrote for information to our valued correspondent, Mr. C. Saunders, of the Cæsarean Nursery, Jersey; and this is his reply:—

"This useful vegetable is much cultivated in the Channel Islands, both for culinary purposes and for feeding cattle; and its truly nourishing and fattening qualities, from the quantity of saccharine matter the root contains, cannot be too strongly recommended to the attention of all cultivators of farming, allotment, or garden ground, as there is no vegetable with which I am acquainted which can be turned to better account, or made to remunerate the farmer or cottage gardener better for his labour.

"The variety generally grown and most approved of in the Islands is the Guernsey Parsnip. It is a broad, hollow-crowned sort, the root measuring from $1\frac{1}{2}$ to 4 inches in diameter across the top, and tapering rapidly away to the end, which is as small as whipcord, and often 18 to 24 inches long, or from the crown to the extreme end $2\frac{1}{2}$ to 3 feet long. The crops vary from $3\frac{1}{2}$ to 5 cwt. per perch of twenty-two feet square, or 15 to 20 tons per acre, depending upon seasons. This season the crop has been under the usual average, as I find by the returns made by the exhibitors at the Agricultural Society's Show, 350 pounds per perch is the average produce.

"Different modes of cultivation are resorted to by different individuals—some preferring to sow them on the broadcast principle, whilst others—and I think judiciously—preferring to drill them, which is preferable, as, when carefully followed out, it presents so many conveniences in the after-management of the crop, as regards hoeing, and keeping the crop clean, and also in equalising the space to each individual plant for the perfect development of the leaves, and consequent swelling of the root, and increase of produce.

"Without rambling about as to the different means which the inventive genius of man has directed him to apply to the successful cultivation of this useful esculent, I have seen the best results produced in the following manner, viz., selecting a piece of land where the soil is deep—if light and sandy it is none the worse for it—and carting six tons of well-rotted manure on it, per *veryée*, or four-ninths of an acre—that is, forty perches of the measurement before specified—and ploughing or trenching the land two feet deep in the month of February, allowing it to remain as rough as possible, that the sun, air, and frost may act upon it, so as to render it sweet and friable previously to sowing the seed in March, or the commencement of April. (This is more particularly necessary on stiff land than where it is lighter, or more sandy and open.) The longer the land lays exposed in this manner the better; but in these islands, where a large proportionate quantity of cattle is kept, and the rearing of cows and heifers constitutes one of the most profitable items in the farmer's returns, it is absolutely necessary to let the grass grow as long as possible, so as to feed them, should the ground broken for the purpose have laid to grass, which is generally the case.

"In the month of March the ground is levelled down either with the spade or heavy harrow, and the seed sown in drills at fifteen inches apart. I once enjoyed the advantage of seeing a piece of land which an experimental friend had divided in two equal parts, one-half of which he had sown in rows at twenty inches apart, and the other half at ten inches. In the latter half the produce was one-quarter greater than where the rows were at double the width, the individual plants, in both cases, being from seven to eight inches apart in the rows; and I have since adopted, and recommend, the fifteen-inch distance, hoeing the plants at the same distance in the rows, which has proved more advantageous than

either, producing heavier crops, and the plants being sufficiently near to each other to cover the whole surface of the ground, preventing the weeds from growing, and saving a portion of the labour in after-hoeing to keep the crop clean, besides allowing sufficient standing room for digging the roots out (which is generally done in November and December, as they are required) without damaging the crowns, which causes them to rot if they are kept any time after digging, should it be found inconvenient to let them remain in the ground. Should such be the case, I recommend them to be stacked in round heaps in the open air, covering with a little straw to keep off the wet, as the influence of air and frost tends to render the roots sweeter and more palatable to the cattle.

"In feeding, they are generally given, in proportions of one-third with other roots and hay, to milch cows, by night, which are turned out to grass by day, and do not, in such quantity, influence the flavour of the milk and butter in the least, whilst they fatten the animals, and tend much to improve their appearance. To heifers and calves they are given in much larger proportions; and they are also given, where economy is studied, in the feeding of horses which are not required for fast work to great advantage, and where it is thought desirable to keep them fat and well-looking. I think they are very healthy food for all animals, and their fattening qualities are remarkable. I have known swine to fatten more rapidly on raw Parsnips than on barley-meal and boiled potatoes, and the flesh, when the animals were killed and cut up, most healthy and fine; and there are some old horses (from twenty to thirty years old), which daily pass our gates, sometimes in carriages, and sometimes in heavier vehicles, well loaded, which have for many years been fed on these roots and hay during winter, and grass and hay during summer, which look remarkably well and healthy,—determining in my mind the fact, that where extraordinary exertion is not required from horses the Parsnip is a most wholesome and healthy vegetable to feed them with, far preferable to white Belgian Carrots, inasmuch as they are sweeter, more nutritive, more easily digested, and, consequently, producing less perspiration and consequent exhaustion. I would not wish to mislead the readers of your valuable periodical by allowing them to suppose that they are preferable to all other food, under all circumstances; but I do argue that there are circumstances where much of the expense of keeping a horse may be saved, and the animal kept in equally healthy and good condition by feeding it on this vegetable, cut in slices, and mixed, with bran, with hay, instead of the more usual and expensive food, Oats, Beans, &c."

DURING last winter we were engaged in aiding an enquiry into the state of the public health in rural districts; particularly in our valleys which had been flooded by the excessive rains. The amount of suffering and death from epidemic influences then disclosed, justifies the assertion that disorders having their begin-

nings in densely-populated places may spread into country districts, and along river-courses, under certain circumstances. The inferiority of the country over the town, in respect to its greater freedom from epidemics, is not quite so great as is supposed; and although nineteen deaths to the thousand, in the one case, be registered against twenty-six to the thousand in the other, it does not exactly follow that the country is healthier than the town to the extent which these numbers would indicate.

The great advantage possessed by the country for bringing-up healthy children would prepare us to expect a large increase of the country population at each census. But the reverse is the fact; it is the towns' populations only which increase; immense numbers of country folks being added to them every year. So that the deaths in country parishes must be reckoned at so many per thousand less the tens, twenties, hundreds, who have moved off. And the deaths among these, wherever they go, must, ultimately, be somewhat above the average, as a certain portion of their lives will have been previously spent and gone in the place of their birth. The deaths of new-born infants are not at all fully recorded in the country; nor are all epidemic causes of death carefully registered. In stating the age of very old people there is also a vulgar tendency to exaggeration. There may be a greater emigration from poor hilly countries than from the fertile plains, owing to the smaller means of employing spare hands in the pastoral condition; and this may partly account for the small mortality apparent in the high lands, where those whom hunger spares of age decay. Still, after all deductions, some of which must be taken with considerable abatement, there is a notable balance in favour of longevity in these regions when compared with the low lands; not merely because all great cities are on the low land, and near the sea, or great rivers, but owing to certain peculiar attributes of the soil itself, which we are bound by the very nature of our office to proceed to descant upon.

We have been at some pains to point out, that the sea, and running rivers, actually possess large sanitary influences, and that it is only when we altogether abuse their powers, and set them to execute cleansing operations enormously beyond their natural capacity, that we make them into sources of disease. As with the water, so with the earth. The earth possesses large disinfecting powers; fixing, and rendering latent, or gradually converting to our use all animal and vegetable remains committed to it. But, in proportion to this absorbing power, up to a certain limit, is the proneness to give out noxious principles when the point of saturation is altogether exceeded. Alluvial lands, then, which have been frequently flooded, whether artificially or otherwise, become, at length, unhealthy only when overcharged with organic deposits, and not from any bad principle in the clay itself.

Almost every well in towns, and about farm-yards, would be spoiled by the filtrations from neighbouring middensteads and drains, were it not that the inter-

vening soil intercepts the mischief. The top-dressing with manure of rich meadows under the very windows of most country houses shews a strong faith, indeed, in the deodorizing abilities of mother earth. The same principle guides us in the formation of composts; in the 'strong measure' of bringing up to the surface barren and hungry subsoil, and in the continual demand for fresh earth for garden purposes; old garden mould, and even that of long-ploughed fields, becoming, in time, injurious to the health of some cultivated plants, not from its poverty, but from its very grossness, which grossness makes it an invaluable top-dressing for poor pastures.

The reverent custom of committing to the ground all that remains of our mortal bodies, only becomes a source of ill-health in very crowded places. Most country schools are near the churchyard, and this is the usual locality, also, of the personage; yet country clergymen and country lads have few ailments. Where it becomes necessary to close a burial-ground, it should be entirely coated over with fresh earth and green turf.

The classical writers founded many beautiful moral reflections on the tendency of the earth itself to become, from long use, foul and effete; which the subsequent history of the once fertile Latin lands has singularly corroborated. The history of the ancient rivers of Mesopotamia, Egypt, India, America, and other like regions, is full of instances of corruption and decay which have come over once-cultivated tracts, not from the want, but from the excessive accumulation of the common elements of agricultural prosperity. (Mark the wisdom which enjoined sabbaths, and jubilees of rest, and other restrictions, upon a too-greedy husbandry in a land, the oldest of the old seats of civilization, and which yet alone of these all remains fit for human abode!)

It was the common practice of the ancients, when a siege, a fire, or other calamity had destroyed their cities, to rebuild them on a fresh site a little removed from the old one. The foundations of ill-drained old houses and streets, and even of old farm-buildings, in very long process of time become unwholesome. As to poultry-houses and yards, there is no doubt that they soon become tainted and require change. Cattle have to be occasionally removed from a well-stocked pasture to allow the ground a week or two to sweeten, and take up the manure dropped upon the surface.

As this attractive quality of the soil is partly dependent on its porousness, it may be increased by artificial means; and this is the object of many agricultural and gardening processes. *Recently* charred substances possess this quality in an eminent degree; * and intractable subsoils, if slightly burnt, become much more tractable; besides being economically moved when no longer holding a quantity of water in combination. Simple exposure to the air, for a year or two, effects nearly the same thing, especially if assisted by occasional turning; and naked fallows may prove to have

* Newly-burnt ashes were enjoined on the Jews as one method of purification. So little have we, in fact, to add to what religion has already taught us, if we read rightly.—J. J.

advantages in this respect greater than has been supposed. Draining the soil increases its absorbent powers and capacity for appropriating manures; and whole tracts of country, once drained, become more favourable to animal and vegetable life from this circumstance, as well as because they are less damp than before.

Quick-lime, which becomes more porous and absorbent when newly slaked with water, is of singular value in tillage. Spread over the surface of old pastures, it takes up and brings into use much injurious or inert matter lying on the surface. Mixed-up even in a small proportion with old garden soils, or crude subsoils, it effects a doubly beneficial change; mellowing them by taking up their superabundant moisture, and becoming itself bulkier and lighter at the same time.

What simple means has not a beneficent Providence placed within our reach for rendering not only powerless for evil, but—actually conducive to our well-being—those dread elements of disease which we hear so much of now-a-days. So that we do not altogether miss of the due proportion between end and means, we shall see things compensating each other in a wonderful way even in this world. We cannot resist quoting again from our favourite author, Bishop Butler:—"Men are impatient, and for precipitating things, but the Author of Nature appears deliberate throughout his operations, accomplishing his natural ends by slow successive steps. And there is a plan of things beforehand laid out, which, from the nature of it, requires various systems of means, as well as length of time, in order to the carrying on its several parts into operation—making one thing subservient to another; this to somewhat further, and even through a progressive series of means which extend both backward and forward beyond our utmost view. Of this manner of operation, *everything we see in the course of nature* is as much an example as the Christian dispensations." J. J.

IN all that has of late been spoken or written on the position to be occupied in our poultry lists by the "Brahma Pootra Fowl," we are not aware of a single fact having been brought forward with reference to its alleged Asiatic habitat beyond what was known to us many months since. In by far the majority of cases, the importations have been from America; but whence that continent received the original stock is a question that still receives contradictory answers. Could it have been satisfactorily ascertained that in any district of Assam, or elsewhere, through which the Brahma Pootra flows, these birds were generally found in such numbers as to constitute them the usual fowl of the country, we should have good reason to regard them, at any rate, as a "permanent variety" of the Shanghae family, however we might dispute their title to be considered as a "distinct species." But such evidence having not yet reached us, our opinions must be based on our own recent observations, and the recorded experience of American breeders.

As the general record of all that may interest the

poultry-keeper, THE COTTAGE GARDENER has need of the utmost caution in sanctioning the application of the term "new and distinct species" to any novel introduction whatever; while it should always stand forward as the advocate of a fair and unprejudiced trial for all that may claim that designation. Now, the discussion with respect to the subject of our present inquiries has been a wordy one, and enthusiastic support and contemptuous rejection have here come in contact. But that the public may be placed in a position to form their own opinion, requires the arguments on either side to be impartially stated.

Two distinct questions seem to be involved in this controversy—

1st. Is the so-called Brahma Pootra fowl a distinct breed?

2nd. Is it possessed of superior merits and good properties to the Shanghae or other breeds?

In reference to the first query, the opponents of these fowls would say, "There are manifest symptoms of an illegitimate descent; they are cross-bred fowls, in which the Shanghae, Malay, and sometimes the Dorking race, have had their part." It is perfectly true that such irregular alliances have, during the present year, produced many birds closely assimilating to the Brahma Pootra form and plumage. But this is but inconclusive evidence, and goes but a little way to sustain the argument, if it be true, that, although such resemblances have been thus produced, there are other specimens, which, in several generations, have been bred true to the required form. We are here especially cautious in our words, for though we have no reasons to doubt that what have been considered as the purest strains of the Brahma Pootras have thrown pure chickens only, we know, on good authority, that the produce of imported birds, of equally high pretensions, have produced buff chickens with black hackle, not to be distinguished from Shanghaes of the same colour.

The most suspicious point, to our minds, is the occasional presence of the wanted semi-Malay pea-comb. If, indeed, we found this feature indefinitely varied in these fowls, our suspicions would increase; but it would now seem, that in comparatively few instances does it appear; probably, indeed, in no more than where, in Shanghaes, a semi-double comb presents its unwelcome form.

So far, the admirers of Brahma Pootras sustain their case; since, beyond any question, the birds have now, in some instances, been bred true to colour and form in more than one generation, so that if this testimony can be continued, "*permanency of variety*" may safely be predicted of them. But will their friends be satisfied with this concession? We fear not; for "*distinctness of breed*," in other words, "*specific difference*," is often claimed for them. But here we must part company with those who hold this latter opinion, and our reasons for so doing are, to our mind, conclusive; since the most careful inspection holds out no ground for the belief that either in form, characteristics, or properties, there exist any specific distinction whatever

between good specimens of the Brahma Pootras and the Shanghae fowl. As we have already observed, were the wanted "pea-comb" general in the former birds, there would be, in that particular, a feature not reconcilable with those of the latter race; but this so rarely happens, that we may well be permitted to consider the instances in which it occurs as exceptions to the normal form.

At the late Winchester Show, there were exhibited several pens of these Brahma Pootras, which deserved to be placed amongst the best that have hitherto been submitted to public opinion. But here, barring colour alone, there was not a single point at variance with the Shanghae character. In corroboration of our own opinion, Mr. Adkins, of Edgbaston, the gentleman to whom the first prize pen belonged, expressed his own conviction that no such distinction could be recognised either in their appearance or habits.

Lastly, let us speak of colour, in which respect it cannot be asserted that the plumage of the Brahma Pootra is farther, or even so far, removed from that of the Shanghae race, as the members of the latter family are diverse to each other. On this head, indeed, the facts would rather associate the contending parties than afford grounds for countenancing a distinction. Our belief, therefore, may be expressed in the declaration that the so-called Brahma Pootra is merely a "*Grey Shanghae*," of which the evidence as regards its distinct character as a permanent variety is yet incomplete.

Our second question was thus stated—"Is the Brahma Pootra possessed of superior merits and good properties to the Shanghae of other breeds?"

Now, neither as regards their constitutional strength, their productiveness as layers, the weight attained in a given time, nor the proportionate quantity of food consumed, or of meat returned, are we able to recognise their superiority over the Shanghaes of other colours, or such races of fowls as are usually placed in comparison with the latter. Their plumage, indeed, may be just cause for admiration; but even taking the best specimens, it is, at least, equalled by selected birds of other Shanghae competitors. So that neither as regards their value in an economical point of view, nor their mere appearance, can we venture to place them over the heads of their rivals.

The foregoing observations must not be assigned to any partial motive, for interest, one way or the other, we have none; we have, indeed, treated the subject with reservation, on account of the limited experience that English breeders have as yet had of the more novel variety; and whatever facts may still be elicited, *pro* or *con*, will, in due course, be carefully placed before our readers.

We must not, however, conceal our opinion that the Brahma Pootras have had unwise friends, who, not content with allowing these birds a clear stage and fair play to develop their merits, have quoted from the other side of the Atlantic the most wonderful accounts of enormous weight realised by them, and a production of eggs trebling in size and number the usual Shanghae

estimate. These statements have been very far from being realised, and the public once misled, is naturally reluctant to give its confidence without complete vouchers of the actual results.

We have the further announcement of several Poultry Exhibitions, of which that proposed to be held at *Liverpool* on the 18th and 19th of January next promises to be an important addition to our principal annual meetings. With great pleasure we observe the wise limitations of the days of exhibition, and trust that so good an example may, at least, secure the most attentive consideration for the propriety of an alteration in this respect in other instances.

The prize-list contains no premium for "*fowls of any other distinct breed*;" an omission, as we have recently observed, that seems to exclude some deserving specimens, while it limits the means by which the relative merits of comparatively unknown varieties may be tested. That much "rubbish" is often thus brought together, we willingly admit, though reluctant to believe that more harm than good results from the retention of this miscellaneous class. We doubt, too, whether, in any point of view, "the Musk, or Brazilian Duck" deserves the encouragement of a separate prize.

A graduated scale has been adopted for the number of pens to be exhibited by each subscriber, while "a fee of three shillings will be charged for every pen exceeding that number." How much better is this than the plan of prohibiting any excess on any terms, and thus inducing persons who desire to show a larger number of pens than the regulations allow to enter them in the names of their wives, children, or servants. This, it is well-known, constantly occurs, and it has been again and again tacitly countenanced by committees, who must have been aware of the evasion. The example of the *Liverpool Society*, therefore, will, we trust, gain many imitators.

At *Kendal*, the 23rd of December, and the two following days, are appointed for the Second Annual Meeting of that Society. The coloured Dorkings, we observe, are separately arranged according to their possession of a rose or single comb; otherwise, the classes follow the usual routine. But why call Bantams "*pencilled*"? Surely, if a bird really thus marked has been obtained, it would not be placed in competition with those that are "*laced*." But a Pencilled Bantam, properly so called, we have never been so fortunate as to behold—and again, if "*pencilling*" is here used as synonymous with "*lacing*," a grave error has been committed.

Pigeons are too arbitrarily selected; some of the best, both as fancy and really useful birds, being summarily jumbled together in the class for odds and ends.

At *Manchester*, where an Exhibition is to be held on the 24th and 25th of January next, an experiment is intended by the institution of a class "*for cocks of any age of the Spanish, Cochín, Dorking, Game, and Ham-burgh breeds*." A great boon is thus, doubtless, given

to intending purchasers; but except under rare conditions, few will desire to exhibit a single male bird. Supernumeraries of this sex are not abundant, and if the usual number of hens are wanting, the class for "*a cock and one hen*" is the best substitute.

The 18th rule declares that "dogs, sticks, and umbrellas, will not be allowed in the Exhibition-room." The word "umbrellas," we trust, may be understood in its widest signification, and so include the infinitely more dangerous "*parasol*," and though we tremble at the audacity that induces this remark, yet the many injuries thus received by valuable birds should be diligently guarded against by such a precaution.

SUGGESTIONS—THE BLACK CURRANT.

In order to afford a little wholesome variety to that class of readers, who, besides being in a position to appreciate present practices, are desirous of making further advances or trying experiments, I intend, now and then, if all be well, to offer a few remarks under the head "SUGGESTIONS."

This will keep matters from becoming stagnant, by opening a wider field for enquiry, and setting other minds in motion. As a commencement, I choose the present subject, which, although not of high consequence on our exhibition tables, yet occupies a high place in the kitchen, the preserve department, and in the invalid's room. It is well known that the Black Currant is in many gardens a failure; and although, possibly, the bushes grow with freedom, yet that small success is met with at the ripening period. This, I have long since proved, proceeds from weakness in the soil—a Red or White Currant would frequently thrive in such cases where the Black failed.

Now, by weakness of soil, I do not simply mean soil short of manure, although this bush loves liberal manurings, I consider the texture of the soil of by far more importance; the manure applied being a secondary consideration.

What is termed a sound loam, that is to say, a loam which possesses a considerable amount of adhesiveness, is the very best, as far as my experience reaches. This character of soil seldom suffers from drought if deep enough, and this is the chief point in the culture of the Black Currant, which absorbs moisture like a willow. I do not know what our physiologists may have to say about the peculiarities of its foliage, but I should imagine it must, from the above circumstances, be of a highly perspiratory character. I do not, however, mean to say that they will only thrive exclusively on such soils; I have known them to succeed to admiration on a dark, fatty alluvium, and, indeed, on other classes of soil, excepting always those liable to droughts.

In order to pave the way to the suggestions I have to make, let me observe, that this bush loves the occasional application of rotting vegetable or manurial matters, and this premised, and the case fairly opened, I may at once proceed to my suggestions. And, first, I will show forth principles based on the foregoing considerations; and this is, so to lay the foundation of the matter, as to sustain, with little extra trouble, an annual renewal of their energies, and instead of exhaustion (consequent on heavy bearing, inducing premature old age), an amount of vitality of a long enduring character.

Let us suppose, then, a trench of five feet in width, excavated half-a-yard or so in depth, on a soil tolerably fitting for their culture, and so as to allow at least six inches of the natural soil beneath them.

We will suppose, also, not to isolate the case, that

the subsoil is not marvellously good, only it must not be a mere swamp, nor a body of dry and poor gravel. Let, then, the experimenter wheel in some weeds, &c., from the rubbish-yard—half-rotten it may be—to the depth of about six inches, and then cover this over two or three inches with a cool and adhesive loam, unless the subsoil be of that character, when he may use a similar portion of the excavated soil. He may now plant a row of Black Currants on this curious basis, and after applying a little of what some gardeners term "*priming*," just to start and excite the young fibres for the first season, he may fill in just as much of the excavated soil, and no more, as will serve to protect the roots.

Here I may digress sufficiently to observe, that by "*priming*," old gardeners mean a mixture of some kind from the compost-yard, generally, with such professionals, composed of several materials, for instance, any or all of the following:—old Cucumber-bed material, become almost a "*mould*," old tan, old leaf soil, the rejected soil of the potting-shed, &c., &c.; such blended well together constitute this "*priming*," and, indeed, it possesses almost magical powers. But it will be said, "*hundreds cannot avail themselves of this material*;" true it is, but then any old remains of the muck heap, the wood pile, old turf, &c., will well supply its place.

And now the Currants are planted, and they will be about six or eight inches below the ordinary ground level, with a ridge of excavated soil piled in a neat line on each side, which will, of course, cause our "*men of one opinion only*" to wonder what the deuce it all means. Now, to affirm that "*means are justified by the end in view*," would, we know, be justly considered a false axiom by our great moralists; it, nevertheless, may answer for Currant bushes. Here, let it be noted, that the rubbish-yard material, weeds, &c., will prove treacherous to the Currant bushes—instead of rising in the world as ambitious Currants would naturally wish to do, they will go down; but there is really no room for despair here. This sinking will, indeed, further the after-culture I have to suggest.

To come to the gist of the after-culture, I have to recommend that this trench or excavation be made, as summers return, a receptacle for weeds, &c., the waste of the garden; and they may be wheeled in as they come to hand, spread equally, and once or twice during the growing season receive a slight covering of the excavated soil at the sides—just as much, in fact, as will serve to prevent the weeds from drying, or from seeding the neighbouring crops.

By this time our ingenious readers will have perceived that the object is to create and encourage a new layer of fibres, mouths, or feeders, which will promote an annual renewal of the energies of the plant, and quite equal to its enlarged capacities. This system will be found to have progressively increased the amount of healthy fibres, and to have created an annually rising mass of compost of a most congenial kind; and which has the merit, by a continuous decomposition, to still form a vacuum on the surface of the excavated portion where ready to receive fresh material, and consequently to meet the rising demands of the bushes. And the matter will not end here; a ready receptacle of an off-hand character will be found, which will work up the weeds of summer to advantage; all that may be complained of is, that a little of system is requisite; but surely this should form no just ground of complaint in the year 1854!

It will be noticed here, that this top-dressing will be alternate layers of rotting weeds and soil; and that it would, in all probability, be several years before the trench became filled above the ground level; consequently, all this time the hollow surface would encourage decay and an amount of moisture of much benefit to the bushes. I do not think that there would be any occa-

sion for a single manuring under this system, providing the staple of the soil was pretty good; such a body of nourishment would be created as would be an ample feeding and rooting medium.

If I were a market gardener, and had a plot of land of proper staple, rather too stiff for ordinary market gardening, I would enter largely into the affair. I believe that our great markets are but moderately supplied with this useful fruit, or that they are too dear to be within reach of the million, for whom, by their very constitution, it would appear, they were in part intended. Mr. Loudon used to call the Apple "the poor man's fruit," but I see no reason why we should permit the Apple alone to monopolise this title. In some market grounds there are portions cooler than the rest, and such plots, on a steady incline, might be thus disposed in parallel lines without any cropping between, and it would be no very difficult matter to carry gutters between the rows, and occasionally irrigate, if a good source of water were at hand. This carried out, it would be found that the blight in this fruit so prevalent would be almost unknown, and that the fruit would swell beyond all previous anticipation.

R. ERRINGTON.

PRUNING GENERALLY.

EVERY shoot which is cut or stopped, every bud or leaf that is rubbed off, every wound or incision made in the bark, and "operating" on the roots, may be implied and classed under this head, and any one may be a *general pruner* without understanding more about the nature of pruning than the man in the moon, who, as I was taught, was a wicked man indeed, and was hung up in the moon, with his axe over his shoulder, for cutting trees on the Sabbath-day, as a warning to all boys who might be tempted, by the evil spirit, to cut sticks, fishing-rods, or riding-whips, on the seventh day of the week.

The effects produced by a *general pruner* may be good, or no good, as it happens; but the effects produced by *pruning on principles* are, and necessarily must be, as certain as these principles are permanent. If any of us prune with a view of doing harm to a plant, the effect will be as certain as the principle of evil is abroad in the world, and so on, with every specific principle; therefore, it may do some good to write, now and then, to remind the world at large about the general and specific effects of pruning on right principles, if only to lessen the chances of doing harm by those who must prune away at something or other every year of their lives, whether they know the right way of pruning different plants or not. There is nothing done within the garden, in which a man, without practice, is more likely to be led astray by loose reading than in the doings of the pruner; the very plan that will answer for one plant, and cause it to fruit or flower, or take to a particular form or shape, may hinder the next plant from flowering at all, and put it out of shape altogether; therefore, it is quite certain that the knowledge that would distinguish the difference between pruning this plant and that plant can never be known to all persons at the same time; and on that very account serving gardeners will never cease from the face of the earth, so that every book called "Every man his own gardener," or doctor either, is just as much as to say, every man has a fool for his gardener, or his patient, and as long as such books are in the world we must battle on to keep down such foolishness.

The different kinds of pruning are intended to produce particular effects on the root of the plant. The food of plants is gathered by the roots, and sent up to the leaves, to be changed by them into a matter from which other leaves are made, as well as branches,

flowers, fruit, wood, and all. Therefore, by pruning-off more or less of the leaves, branches, or roots, we have the power of regulating what they produce, and the regularity of the plant as well. This wonderful power should not be intrusted to any one who was likely to abuse it from not knowing the delicate process by which nature regulates the movements of the organs by which a plant is formed. The quantity and quality of leaves, flowers, fruit, and timber, depend on the skill of the pruner fully as much as they do on the action of the leaves and branches, and according to that skill the quantities and qualities are diminished or increased in the same ratio.

If you were asked to put the whole strength of a tree into three particular branches pointed out to you, what is more natural, in the absence of practical knowledge, than that you would prune off all the rest of the branches, as many people would do who ought to know better? You heard in a lecture, or read in a book—perhaps from this very pen—that if so many branches are cut off from a tree the sap that would be expended in feeding them would go to nourish the remaining branches. All that is right and proper; but your application of the principle, or rule, may be much worse for your tree than no application at all. Suppose that your tree has been looking badly for a long while, and that after digging round it the looks are no better, and the rotten manure makes it look worse still: it is, in fact, in soil which does not suit it, or the roots have suffered a violent check, or the bark has got what we call hide-bound, and the circulation is languid in consequence. Now, if you apply the favourite remedy for throwing the whole strength of the tree into two or three of the branches by cutting off the rest of the branches, the chances are that no strength will remain in it to be forced this or that way, because pruning cannot alter the nature of the soil, or increase the vigour of the roots, neither will it loosen the tightness of the bark. According to my experience, the most confirmed errors among amateur pruners lies in this question; they put faith and great stress on a thing they do not understand, because some popular book or writer said that the thing is so good in a particular case, or in general cases. Quack doctors kill people, as sure as ever Dr. Hornbook did, by the same rule. A certain bolus cured a certain individual, or he cured of himself, in spite of it, and that bolus must be the "universal medicine" for all comers, until the last comer takes the man of pills to his long home without ceremony. No; all the pruning in the world will not cure a tree of any disease that is of the stint family, or, if it does, the tree was not so much stunted as it looked to be.

The only sure and quickest remedy for a really stunted tree, be it Oak or Apple, old or young, is to head it down to near the ground, or graft, and to give it one more chance to renew its strength. Nevertheless, a young tree which appears to be stunted by the too much exposure of the situation, may, in fact, turn out in the end to be in better condition than one of the same age and kind that has been too much nursed, and is grown too fast in consequence: all the difference depends on the after-management.

A fast man prefers a fast-growing tree to cover his walls, or, in its turn, to become so much of "the walls of old England;" but, unless he is a good pruner, his wall-trees soon get bare at the bottom by over strength, while the "walls" of England go to the bottom for want of proper strength; while the slow and sure gardener provides for the covering of all his allotted spaces as his trees advance; and the slow and easy forester, who is sure to "ease her" at the proper time, will cut down the stunted Oak to the surface of the ground when it is done with the nurse, and thus secures a sapling so full of sap, from so many roots, that it will

neither get hide-bound by the exposure of the situation, nor suffer from the necessary pruning, half so soon as the one that was more promising at first to an unpractised eye. All this time, the man who would not prune or lop off a bough for the world, looks upon our men, both fast and slow, as next thing to being *daft*; but, between the two, they so managed at last as to confine him to the park, and to the care of the park ranger, where he may practise the art of no-pruning until it is discovered that a tree may be made into a specimen as well as a Tom Thumb. While this is being settled, let us, who have neither park nor paddock, learn and remember, how any tree, or shrub, or bush, may best be grown into specimens of their kinds, whether they are to be as timber trees in the boundary, or for their looks in the front rows or on the grass, or whether they are over the fence on the other side, where Mr. Errington is looking daggers at us, and where we shall call on him, when we get all round, notwithstanding.

Now, what is the best standard pattern for a timber tree—a Maypole, a broom-stick, or the leg of a Cochin cockerel, or what? The leg, certainly, to begin with, because it is feathered to the ground, and also because it is crooked at the knee, and they want knee timber in the navy; so we have two main points to begin with. They also want straight timber for building, and the broom-stick is as straight as can be; but the broom head will never do at all, if we aspire to a Maypole; and if not, why not, or how are you to help it? That is just what I am driving at; and if I do not drive to it, and straight through it, before I finish, they will never make me a royal forester, or give me a cottage near a wood.

Being feathered down to the ground is a good beginning for a specimen tree of any kind, but in those for timber it is not to be expected always, the breed having a good deal to do with such feathers; and where it is the nature of the tree to be low-feathered at first, if it stood still for awhile, and moped like a crowing cockerel, or like the young oak, as some believed, when it started afresh it may have lost the feathering principle, and that rather by the force of the sap than by the force of circumstances; and we are not allowed to choose when a young tree darts off on a naked leg, other points being favourable, or to indulge in the fancy should it show the feather.

After spray and small feathering, it is just as natural for a timber tree to make some boughs larger than others, as it is for a cock or hen to make tail feathers; and if the larger boughs expend that which ought to go for making straight timber, as they most would, or if the tail feathers lower the fancy value of the birds, we must lower the boughs, by stopping them in time, for we cannot pull them out as they do the feathers. Stopping, therefore, is the very first and most essential step in pruning timber trees, and many other trees, if not all trees; and when a young tree is in full vigour, if the leading bud of a larger side-branch is broken off at the right time—that is in June or July, when the force of the sap is the strongest—it will be enough, for the immediate effect of this stopping is to direct the force into other buds on this branch which might otherwise lie dormant; and while this moving is in progress, the force is partly expended in adding to that which pushes on the leader at the top of the tree, but stopping may be done any day in the year, although not so telling at other times. If the first side-bud that starts on a stopped branch is allowed to go on, and the rest are not allowed to go on, but are stopped at different lengths to make feathers, or feathery branches, we have the first foundation quite sure for a piece of knee timber at a future day, and the angle of the knee will be according to the angle at which it is natural for a side-branch to grow out of a main branch of that particular tree;

some trees throw out their side-branches at sharp, and some at flat, angles, and others at all angles between the two; so that in a well-regulated wood or forest all kinds of angles ought to be had for the different parts for which knee timber is in request.

Another stopping, and for a very different purpose, may be made in April, or any time in the spring, in order to husband a scanty supply of sap, and to give more time for a newly-transplanted tree to make fresh roots before the demand on them increases by the length of day, and by the greater heat of the sun. I once made an experiment to see the value of this stopping in particular, and everything was in my favour. I removed five Silver Firs from a young thick plantation, growing on a moist sandy loam; the trees were not old, nor very high, not more than ten feet the highest of them. They were removed at the end of March, a bad time, to an open, dry, gravelly soil, newly broke up—another bad speck—and, as it happened, April was more April-like that season than it has been since, worse still for the Silvers, as it took them unawares, and causing them to move on, go or no go, I forget all about the May following, but Mays seldom passed in that part of the country, near the east coast, without continuous east winds and hot days, the wind often so cold as would chill a badger basking in the sun. The men were finishing a new walk in that part of the garden, and I was trying if all the fastenings for the newly-planted trees were all right, when it struck me, all at once, to try this experiment; and I recollect the circumstance so well, for the odd expression made by the man who went for the step-ladder, on returning to the rest at breakfast, thinking I was out of hearing distance—he declared that he “would be diddled if master had not been bullfinching all that blessed morning on that there tree.” This stopping was the severest on record. I took off every leading bud all over the branches, and left only two buds on the top of the leader, or centre stem, also every other prominent bud all over the tree. In this state the tree did not move a bud, except the leading one at the top, for five weeks after the other trees were in growth; and during that time, the sap that would be expended in a fresh growth was so far kept in reserve until sufficient strength was gained by new rootlets, to force open the more backward buds, and by that time these new roots had acquired such power as kept up a strong growth for the rest of the season; before the middle of July, this tree looked far better than any of the other four, and when the new top shoots of all of them were measured, the leader of this one more than doubled the length of any of the others—just fourteen inches, while the longest of the rest was only five inches: the latter tells of the severe trial they endured by the change. For the next three years this tree looked odd, but was in much better health than the rest; and, by that time, most of the branches gained leading shoots. The oddness consisted in this—the tiers of branches were rather close all the way up, until two years before they were removed, when the tiers were made farther apart, and by my removing the buds from which the tier of that season would have come, there was only one shoot to that tier from the second bud left in case one should fail. When a full tier was made the following season, the distance between it and the one next below it was so out of proportion to all the rest that no one could guess how that could be. This opened my eyes a good deal; and my practice on all the Firs, Cypressess, and Cedars, was very different after that, and to this day I seldom see a young Cedar of Lebanon without wishing my fingers in the pie with it.

I may as well say that this took place at Shrubland Park; and that finding a disposition to a bush habit in one of the young Cedar of Lebanon trees there, I worked

it so by stopping, and by increasing or diminishing the number of tiers in all the leading side-branches, and not allowing a bud to open but in the very part where I wanted. I also kept the leader, or the centre part of the bush, down for three years; by that time I had established seven leaders from the bush-head near the ground, and treated every one of them as if it was to form the tree itself; then I let go the lawful centre. I forgot to leave any memorandum about this tree, but it begins to attract such notice now, that what I meant to do with it, and how I did it, were among the first questions they asked me this autumn. What I had in view all the time was to make a fountain of Cedar, as it were, the lawful centre to represent the longest jet, and the rest to be like so many more jets all round it. All seemed pleased with this idea, and none more so than Sir Charles Barry. The several leaders were now getting too close together; we agreed to tie a string to each of them, and pull it out as far as possible, and to fix the ends of the strings to pegs in the grass; and if they take care, by diligent stopping, they may have eight Cedar-trees from one root; but I must stop myself for the present.

D. BEATON.

STATICE.

THE English name of this genus (Sea Lavender) is as characteristic of the position in which many of the species are found, as the Botanic name (from *Statizo*, to stop,) is demonstrative of the medical astringent properties of some of the species. The beautiful Common-Thrift is its next door neighbour. In fact, the *Armeria maritima* is as often called the *Statice armeria*. The broadish large foliage of many of the genus, is, however, very different in its aspect from that of the narrow leaves of the garden Thrift. Many that have been introduced I have never had the pleasure of seeing, but where there is room, I believe almost every one of them to be interesting, from the beauty and compactness of their numerous little flowers, and which, with the command of a greenhouse and a cold pit, may be made to produce bloom for nine months in the year; and where there can be more heat given in winter, some would bloom all the year round. I intend this to be a gossiping article about some of the most interesting for house culture.

1. *Statice pseudo-Armeria*.—This plant is supposed to claim for its locality the south coasts of Europe and the north of Africa; especially about Bona, in Algiers. It is, therefore, considered pretty hardy, and if unable to stand in all places out-of-doors, it will thrive well under the protection of a cold pit or frame in winter, and if well-established, will bloom early if transferred to a warm greenhouse in spring. It is easily propagated by division, is not particular as to soil, but will grow most freely where it is light and rich. The flowers are purple, blue, and bright; and the leaves, unlike the Thrift, are broad, so much so, that good authorities consider that the species is identical with *latifolia*.

2. *S. Fortunei*.—This is a low-growing herbaceous plant, found in China, by Mr. Fortune, near Chin Chin, and in marshy ground. It bears yellowish flowers. It is supposed it will prove nearly as hardy as the Thrift, but, being as yet rather scarce, it will be safest to give it the protection of a cold frame in winter, and then it will bloom in summer and autumn.

3. *S. sinuata*.—This has chiefly been found along the eastern shores of the Mediterranean, and has been grown in our gardens for more than two hundred years, but not so much of late as it formerly was. It has purple, yellowish flowers, and singular scolloped foliage. In damp inland places it will require the protection of a pit in winter, but in dry places, and on raised mounds of stones or rock-work it would be likely to stand well. It generally seeds freely, and may, therefore, be sown in

such suitable places; and if then the winter destroyed it there would be little harm. Both it and *Simonium*, a dwarf herbaceous plant, with blue flowers (Wild Marsh Beet), found on muddy sea-shores in this country, and which, in inland places, have received protection, have been found to be hardy at Hamburg; *sinuata* being treated as a hardy annual.

4. *S. suffruticosa*.—This, as the name implies, is a beautiful low-growing shrubby herbaceous plant, producing its pretty blue flowers for most of the summer, and the protection of a dry pit or a greenhouse in winter. If exposed to damp and cold together, and a rather confined atmosphere, it will be the victim of mildew to a certainty. It is generally supposed to be a native of Siberia. On a mound of flint and stones, at the foot of a conservative wall that was covered with glass during the winter, especially if the wall was at all heated, this dwarf pretty plant would be at home. As worth trying, in a similar position, might be mentioned, *monopetala*, *mucronata*, *ovalifolia*, *latifolia*, *speciosa*, *tetragona*, *frutescens*, *pubescens*, *puberula*, *eximia*, &c. *Suffruticosa* is generally propagated by cuttings.

5. *S. eximia*.—Although this is next thing to being quite hardy, it is well worthy of the name of *choice*, as it has pretty flowers of a lilac-rose colour, grows freely in equal portions of sandy peat and loam, and is easily propagated by divisions when, after blooming, the plant is in a dormant state.

6. *S. frutescens*.—Another of these low-growing, compact, blue-flowering plants, midway between a shrub and a herb, and which might be considered a Lilliputian of *arborea*. It was first bloomed on the continent about five years ago. It was brought from the *Canaries*, and will want but little water when in a state of rest in a dry cool greenhouse or pit. Until more diffused, it would be as well not to trust it much in a temperature below 45°.

7. *S. monopetala*.—This is a strong-growing plant, of a semi-shrubby character, and producing clusters of purple flowers. It well deserves a place in a good greenhouse, where the temperature in winter is not below 45°, and where in summer it can rise to 70° and 75°. It is found in Sicily, the south of Europe, and the north of Africa. On many of the species there are salt exudations formed, which seem injurious when the plants are kept in a dry, warm atmosphere, but mostly disappear under a free use of the syringe, so applied as not to soak or puddle the surface soil. This plant has its green parts dotted over with white small spots of these exudations, which appear to be of a salt-and-lime character, something like muriate of lime. It has been proposed to apply a little of such matters to the soil or water used in cultivating it. In fact, a very small quantity of salt in the water is not disliked by any of them; and this seems very natural, when we know that most of them, at times, are in their native homes washed by the fogs and the spray of the ocean. The quantity, however, must be something homoeopathic, and given with caution. The present species blooms during summer and autumn, and is propagated by cuttings of the young shoots when getting a little firm at the base.

8. *S. puberula*.—This is a beautiful, very dwarf herbaceous plant, seldom above one foot in height, producing blue-purple flowers in spring and summer; a native of Graciosa, one of the Canary Islands, and requiring from us a dry cold pit, or greenhouse, in winter, when comparatively in a state of rest, and the giving of it but little water then. Just at that period it would have plenty of moisture at home, as that would be the winter, or, rather, the wet season there; but then it would previously have been subjected to a temperature and a light we should look for in vain in our autumns. It is best to propagate it by division, as growth commences in spring. Like all others from similar latitudes, how-

ever cool we may manage to keep them in winter, they delight in a rise of temperature as growth commences, and frequent damping of the foliage then.

9. *S. Halfordii*.—I have only seen small plants of this, which seems a compact species or variety, for I forget, if I ever knew, anything about its antecedents. It seems, however, a desirable plant.

10. *S. Dicksonii*.—This, like the last, is a neat, compact sub-shrub, producing blue-purple flowers early in spring. Well-grown it gets from twelve to eighteen inches in height. I suspect that like the last it is a hybrid, home-raised, and none the worse for that; at any rate, I have been able to obtain no information as to its introduction. By some it is supposed synonymous with *Ritidophylla*, a species producing blue flowers, and with peculiar file-like leaves, introduced from South Africa a dozen of years ago; but so far as I recollect, that was more soft and herbaceous in its character.

11. *S. imbricata*.—This most desirable though herbaceous species is a native of Teneriffe, has large hoary, irregularly-lobed leaves, and broadly-winged stems, and produces its bluish-purple flowers in abundance in spring, summer, and autumn; and, could we command heat, light, and air, enough in winter, would be a continuous bloomer. I believe it was flowered for the first time in Paris, in 1847. It is propagated by half-ripened shoots; and if taken off with a heel so much the better. But as a cutting would make little show as a plant, until the end of the second, or during the course of the third season; and as, besides, as will be seen presently, the process will be found a little troublesome to beginners, it would be preferable to obtain nice healthy plants of this and others in four or five-inch pots from a nursery. These, if obtained now, will merely require to be kept in an airy part of the greenhouse, and where the temperature at night averages 45°, or rather above it than below it. Here, during the dark months, no more water should be given to the roots than is sufficient to keep them neither wet nor dry; but the atmosphere must neither be confined, nor dry, by means of fire-heat in excess, nor otherwise. In sunny days, therefore, the sponging and dusting of the foliage with water will be an advantage. If a number of pots, or several kinds are grown, it would be advisable to place them together, with a little clean moss between them, and a little placed over the surface of the soil, and the merely dusting of this moss with water in fine weather in winter, would, by evaporation of moisture, give a suitable atmosphere to the foliage, while the roots are kept from being over wet. This, and the sponging of the leaves frequently, will keep the plants in good health. In spring, as the days lighten, and lengthen, the plants should be moved to the warmest end of the greenhouse, or any other place, where an average night temperature of from 50° to 55° can be commanded; and, soon after the plants push freely, they should be shifted into clean, well-drained pots, and of such a size as to allow from one to two inches more space all round. After this they should be kept rather close until the roots are working in the new soil, when more air should be given; and, by Midsummer, another shift, rather larger, should be given, when the same process should be repeated. A cold pit, kept rather close, would then be the position for them, syringing them over head in a sunny afternoon and shutting up early. Towards autumn more air should be given; and by the end of October they should have their position in the greenhouse, and be treated as they were the preceding winter. During the first summer all flower-stalks that appear should be nipped out. In very sunny days they would also require a slight shading for a few hours during the hottest part of a summer's

day. In the spring, when they obtain a temperature of from 50° to 55°, they will begin to throw up their flower-stalks, and then, from April, an open place in a greenhouse will be the appropriate place for them. During summer they will find no fault with rich surface-dressings or weak manure-waterings. When the dark days of the end of autumn arrive it will tell injuriously upon flowers and stems, and, therefore, the flower-stems had better be pruned out, and the plant subjected to the usual winter routine and spring management. After that period, however, younger plants will be found more manageable. To do anything well in winter, as respects blooming them, an average temperature of from 50° to 55° would be necessary, with a rise of 10° from sunshine. It will be seen, therefore, that a little extra assistance, in the way of heat in spring, and a moister and closer atmosphere when growing than would suit a Heath, though by no means a close one, are the principal minutiae to be attended to in the culture of this and kindred species. Those who keep their houses below the temperature specified, but could give the necessary heat in a slight hotbed in spring, must take care that the heat is *extra sweet* if from decomposing animal and vegetable matter, as the least rank steam would neutralize all other efforts.

12. *Statice arborea*.—We mention this last on the principle that the conclusion of a feast should be richer and choicer than its commencement. When well grown, some three feet in height, and as much in diameter, with its semi-shrubby habit, fine foliage, and large heads of blue flowers, it is second to none of the group, and inferior to hardly any ornamental plant that graces our plant-houses. Whoever can combine convenience and attention will be sure to be rewarded. The want of success is chiefly owing to a low temperature and a sodden soil in winter, and the want of enough of heat, and enough of moisture in the atmosphere in spring, and the want of a closish, moist atmosphere when growing in summer, and especially when young. A more open situation suits the plant when in bloom, and that, in an established plant, may be said to be always, provided that during winter the temperature of an intermediate house, ranging from 50° to 60°, is afforded. It is propagated by cuttings; but it is best for beginners to have a nice young plant to commence with. Much the same process may then be gone through as with the preceding, such as giving a temperature above rather than below 45° in winter; an airy position, without cold draughts; little water at the roots; frequent syringing or sponging of the foliage; a rise of from five to ten degrees in early spring; a fresh shift soon afterwards, and one or two more before the end of July, keeping the plants close, moist, and a little shaded after each shifting, and more airy afterwards, especially after the last. The cold pit, with not too much air, being the best position after the end of June, and an early transference to the greenhouse in October if it is not to bloom in winter, and an intermediate house if it is to do so, as the blooms will not open freely under 50°. I know that some gardeners succeed with this plant with much rougher treatment as respects low temperature, such as from 35° to 40° in winter; but it would require experienced fingers to go about it under such conditions. We know that it has been found growing amid the debris of rocks washed by the sea on the coast of Teneriffe; and there, while the summers are hot, the climate throughout the year is mild, frost near the coast being unknown, and the snow only showing itself in the tops of the highest mountains. Like the rest, its native locality points to the importance of a moist atmosphere, and the sponge or the syringe is necessary to remove the saline incrustations which come upon the foliage, and which, if left, would be so many barriers to a free respiration.

GENERAL CULTURE.

1. *Selection of Sorts.*—If you must keep your house cool in winter and in spring, and yet wish some of this genus, choose from the first half of those mentioned. If you can, give the mentioned temperature, &c., begin with the last and go backwards, for as many as you can manage. "Are these the best?" I know the last-named ones are very good; and I know, also, that any very fine ones I have omitted will be noticed by either coadjutors or readers.

2. *Propagation.*—I have already referred to the time and manner for herbaceous kinds; I now confine myself to raising plants from cuttings. Choose stubby shoots getting firmish at their base, while their upper part is green and a little soft. Cut them off close to the old stem, if possible, and expose the cut ends to dry for 24 hours, while the foliage is kept moist and shaded. Then insert them in silver sand, over sandy loam, in well-drained pots; water, to settle the soil, and when the foliage is dry place a bell-glass over them, and put them in rather a shady place for two or three weeks, in an average temperature of from 55° to 60°; then plunge the pots in a mild hotbed 10° higher, and pot off, and keep close as soon as struck.

3. *Soil.*—Equal parts of fibry loam and peat, half-a-part of very old cow-dung, dry, and in small pieces, or the same amount of dried old leaf-mould; half-a-part of broken charcoal, the same amount of broken sandstone and broken pots, and nearly half-a-part of silver sand, increasing the loam towards the last shifts. Before adding the sand, the very fine dusty matter should be removed from the other constituents by means of a fine sieve.

4. *Potting.*—This is best done when fresh growth is commencing. Young plants may have several shifts in the season, so that the pot be filled before winter. Flowering plants should only be shifted in spring. The ball should be well moistened before fresh potting, the roots be gently disentangled, so as to enter at once among the fresh soil, and that being roughish should be packed as firmly as will prevent injuring the roots. Before commencing, have pots well cleaned, aired, and drained; and at early spring let the compost be aired and warmed, that the roots be not chilled.

5. *Watering.*—It has been shown that unless in the case of flowering plants little would be wanted in winter. It will be required liberally in summer. If you give large shifts do not puddle the soil before the roots get into it. They relish manure-waterings amazingly. One reason may be, that thus they obtain more saline matter than in clear water; another is, that, though often naturally perched among barren spots and debris, the roots have large fields of action, and decomposing vegetable and animal matter is washed to them. In our gardens, at any rate, when given weak they evidently enjoy it. At all times, summer and winter, the foliage should be sponged or syringed.

6. *Temperature and Position.*—These have already been indicated. A warm greenhouse in winter; an extra rise of temperature in spring for flowering plants; the usual greenhouse temperature when in bloom. For giving plants the same treatment in winter and spring, and a continuance of a close and moister and warmer atmosphere in summer, such as a cold pit, kept closish after Midsummer, would supply; hardening the plant for its winter tenancy of the greenhouse.

7. *Duration of Plant and Blooming.*—No one likes to part with an old friend, but after the plant is three or four years old younger plants will give more satisfaction. It will have been seen, that some kinds are nearly continuous bloomers; but when allowed to do so the plant is sooner worn out, and is seldom so attractive at any one time as when it is grown to be bloomed, and then rested and grown. It will, therefore, be evident, that

especially with early-blooming kinds it would be advisable to prune out the flower-stalks when most of them are past their best; allow the plants to rest a little; and then set them growing again, such as in a closish cold pit in summer.

R. FISH.

THE NARCISSUS.

(Continued from page 181.)

Forcing.—Many species of this genus force admirably, and grow in pots, for one season, quite as well as the Hyacinth. Though not so varied in colours as that genus, yet, on account of their fragrance and bright colours, as far as that property goes, they serve well to ornament the greenhouse and the conservatory at a season when flowers are most welcome. The golden-yellow that predominates in the Narcissus gives a variety of colour, that without them would be wanting in early spring-forced flowers. The species generally used for forcing are the varieties of *Narcissus Tazetta*, the *Polyanthus Narcissus* (so named because the flowers are produced in heads like a Polyanthus), and the *N. jonquilla*, the single of which produces heads of flowers in the same manner. The soil to be used in potting these bulbs should be stronger than that proper for Hyacinths. I generally use it in the following proportions:—Good strong yellow loam, three-fourths; leaf-mould and cow-dung, both well decomposed, one-fourth; and about one-eighth of river or sea-sand; the whole well mixed together, but not sifted. This I use in a moderately dry state; that is, neither positively dry nor positively wet.

The large bulbs of the *Polyanthus Narcissus* require larger pots than Hyacinths. The finest flowers I ever had were forced in 7-inch pots, two bulbs in each. I prefer putting in two bulbs in each pot, because then a stick can be thrust in between the bulbs and each flower-stem tied to it, and thus I had a greater number of blossoms in each pot. Large pots, and more bulbs in each, might be used; but they are not so convenient to place in baskets in the windows, or on a stage in the hall, if wanted (which they often are) for such a purpose. Jonquils have much smaller bulbs, and may, therefore, have three or five bulbs in 5-inch pots.

The time for potting may be extended from the beginning of October to the middle of December. The first batch potted to be brought into a gentle heat; the first to bloom as early as Christmas, and the others in succession. The last need not be forced at all, but have only just the heat the greenhouse affords them. To keep these last back, I have them placed behind a wall or low hedge, protecting them from late frost by an awning of mats, till the early and middle bloom is nearly over. By a little contrivance of this kind there will be a succession of flowers to the end of April.

The pots for the *Polyanthus Narcissus* would be better suited for the purpose if they were deeper than ordinary, because the bulbs are longer than the Hyacinths or Jonquils either, and their roots are stronger and more numerous. In potting, the bulbs should only be partially covered with soil, in order to give greater depth of soil for the roots. Press the earth previously to placing in the bulbs very firmly down. This prevents the roots descending too rapidly to the bottom of the pots, and whilst descending so slowly they are receiving more benefit from the soil, taking up their food, as it were, as they go down. When the pot is full enough of soil to allow the top of each bulb to be a little above the rim, then place the bulbs in the pots, pressing them gently down, and then fill in the soil round and between the bulbs, press it very firm to them, to keep them from rising up when the roots begin to protrude out at the base of the bulbs. I have seen them rise quite up and out of the soil when not properly secured by hard pressure. When they are potted, place them on a bed of coal-

ashes thick enough to prevent the worms from penetrating through it into the pots. Set them quite level and close together. Then work in between the pots more coal-ashes, or some spent tanner's bark, and cover the pot, just two inches deep, with the same material. The first batch should be marked so as to be known or distinguished from the second or third lot. I use a stick tall enough to stand four or five inches above the covering. This stick is cut to a smooth face, large enough to hold the names and date when the batch was potted. There is then no difficulty in knowing which to begin forcing.

Bulbous plants are similar to all others in this respect, that they must make new roots before they ought to start into growth to produce leaves and flowers. All other plants, such as Roses, Jasmines, Honeysuckles, Lilacs, &c., intended for forcing, should always be potted some months before they are brought into heat to be forced into (earlier than is natural) bloom. *Narcissi*, intended to bloom at Christmas, should be brought in and placed in a heat of from 55° to 60°, about the middle of November. Take the batch up out of the bark, rub off the bark from the surface of the soil in the pots, and if there are any dirty let them be clean washed. Place them near the glass, to prevent the leaves drawing up weak; give very gentle waterings at first, increasing the quantity as the foliage is more developed, and use the syringe occasionally, to cleanse the leaves and keep down red spider.

As soon as the flower-stems have advanced above the foliage, then, without further delay, place a stick in each pot, and tie each stem separately to it; but do not tie them too tight, because, if you do, the stem will be contracted, and, perhaps, broken, if neglected too long. If this tying is judiciously and tastefully managed, the heads of flowers will, at a short distance, appear like a large single head, and have a much finer effect. Like the Hyacinth, and other bulbs thus forced, the *Narcissus* does not force well more than once, or, at least, without an interval of two or three years' rest, and good management whilst in that state.

T. APPLEBY.

STOVE FERNS.

(Continued from page 163.)

DIPLAZIUM STRIATUM (Striated).—A Jamaica Fern of considerable magnitude. The fronds are twice pinnated, and grow frequently five feet long, and each wing, or pinna, a foot long. The leaves are sound and dentated. The stems and ribs of the leaves are covered with fine hairs. The root-stock is erect, not creeping, and, therefore, the plant must be increased by seeds.

D. SUBALATUM (Half-winged).—This is a rare Fern in cultivation; native of the warmest parts of South America. The fronds are thrice pinnated at the base, and twice pinnated above; growing four feet high; and the root-stock is a single stem two feet high. The stems are channeled, or winged, hence the specific name. It is a remarkable, distinct, handsome Fern, requiring a large stove to grow it well. Increased by seeds only.

D. SYLVATICUM (Wood).—A Fern, from Ceylon, of great beauty. The fronds are pinnate; the lower pinnae being long and spreading, and gradually shorter as they approach the end of the frond; they grow from two to three feet long; leaves almost round, and cut at the edges. The stem is covered with dark brown scales, and the rhizoma has several heads of fronds upon it; by these it may be increased.

DOODIA.—A commemorative name in honour of Mr. S. Doody, an early student of Ferns and Mosses. It is a genus of small-growing Ferns, with the fronds very rough to the touch. Allied to *Woodwardia*.

D. ASPERA (File-like, or Rough).—A very neat, handsome Fern, from New Holland. It will live in a good

greenhouse, but thrives much better in a moderate stove. The fronds grow upright, very rigid, from eight to ten inches high, and are of a dark green. Leaves sickle-shaped, the edge sharply cut, so as almost to be like spines. A suitable species for small collections, and easily increased by division.

D. BLECHNOIDES (Blechnum-like).—An Australian Fern, very similar to the last species, but may be distinguished from it by its greater size, and having its stems densely covered with black scales. May be increased by its bundled rhizoma.

D. MEDIA (Intermediate).—This is the *D. unulata* of R. Brown, from New Zealand. It is a graceful, elegant Fern, and very remarkable by its fronds being red when young. They are, when full grown, a foot-and-a-half long, very slender, and drooping gracefully. The leaves are crescent-shaped, and spiny at the edges. Root-stock creeping. Increased by division.

DORYOPTERIS.—A small genus of Ferns, separated from *Pteris* by Mr. J. Smith. Derived from *dory*, a spear, and *pteris*, a fern: one of the species has leaves in that form. The genus may be known by the seed-cases being narrow, placed on the margin, and in a continued line, and by the reticulation of the veins. The species are all of a dwarf habit, and are, therefore, proper to cultivate in small collections.

D. COLLINA (Hill).—A Brazilian Fern, growing not more than ten inches high, with leathery, palmate, bright green fronds. The sterile ones are sometimes thrice, and sometimes five times parted; the fertile ones are always five, parted or spread-out in five divisions, like a man's hand. It is an elegant species, and may be easily increased by dividing the creeping rhizoma.

D. PALMATA (Hand-shaped).—Differs from the preceding species by being taller, and by the lobes of each leaf having more divisions, so as to be almost pinnated. The sterile fronds, also, are almost simple when young. It is very beautiful, easily grown, and increased by division.

D. SAGGITIFOLIA (Arrow-headed).—A Brazilian Fern of great beauty. The fronds are simple, acute, nearly a foot high, almost all seed, bearing stems black and smooth. Increases readily by division. This species is very distinct, very elegant, and ought to be in every collection, however small.

DRYMOGLOSSUM.—A genus of low, creeping, curious Ferns, established by M. Presl. The essential characters by which it may be known are an irregular compound of the veins, and the position of the seed-cases, which are placed on each margin in a continuous line on the upper part of the fertile fronds.

D. LANCEOLATUM (Lance-shaped).—A Jamaica Fern of considerable beauty. Fronds from ten inches to a foot long, simple, and narrower towards the end, where the contraction takes place. The seed-cases commence and are continued nearly to the apex, or end, in a continuous line, very near the edge, but not quite close to it. The irregularly-running veins are inside the leaf—a curious and rare case in foliage. Increases readily by dividing the creeping rhizoma.

D. PILOSILLOIDES (Mouse-ear-like).—Probably the smallest of all Ferns, growing only about two inches high. The sterile fronds are oval and narrow at the base; the fertile are very narrow, and, in consequence of being so, the continuous line of seed cases almost cover them entirely. The leaves are simple, and placed on each side of a slender creeping rhizoma, by dividing which it may be increased. This small Fern grows best on a moss-covered block of wood, hung up in a shady part of the stove. It is very rare.

DRYNARIA.—A rather large genus; name derived from *dryinos*, the oak, in allusion to the form of the leaf of the species upon which the genus was formed. Distinguished by the seed-cases being naked—that is,

without covering—and the compound crooked lines of the veins.

D. CAPITELLATA (Small-headed).—An East Indian species, of a neat, pleasing appearance. Fronds pinnated, attaining a foot in height; pinnæ, or leaves, ovate, with a thick white edge. The seed-cases are large and round, placed in a regular row at regular distances on each side of the midrib. The root-stock is creeping, throwing out roots by which it may be increased.

D. CRASSIFOLIA (Thick-leaved).—A West Indian Fern, of a coarse strong habit of growth. The fronds grow two or three feet high; they are simple, long, lance-shaped, with a contraction at the base. The seed-cases are remarkably large, round, and placed in one series at regular distances between the alternate primary veins. Increases readily by dividing the creeping rhizoma.

D. HEMIONITIDEA (Hemionitis).—This is the *Polypodium membranaceum* of Don. A beautiful Fern from the East Indies. Fronds simple, eighteen inches long, broad, lance-shaped, with wavy margins; very membranous, and jointed to a scaly, creeping root-stalk. The seed-vessels are small, round, and placed irregularly. Increased by division. T. APPLEBY.

(To be continued.)

MANAGEMENT OF FORWARD EWES AND LAMBS.

(Continued from page 184.)

HAVING, in my former paper, brought the management of Ewes down to the period of lambing, I would observe, that the risk, or probability, of loss is much less than it is with later Ewes, when the lambing season occurs in the months of December or January. In general, it is unnecessary to resort to the lambing-yard, or 'dead fold,' by reason of the comparative mildness of the weather (peculiar to our climate) during the month of October and early part of November. On the other hand, it is not advisable, as is too often the practice, to allow the Ewes to roam at large during the night time, as those about to yean are too apt to stray away from the main part of the flock, and their Lambs are often lost, or found dead under untoward circumstances. The shepherd may be diligent and attentive, yet it is almost impossible for him to find the Ewes which most need his assistance in a dark night, when they are allowed to lie promiscuously over a whole field. I therefore recommend that a shifting-fold should be used, being placed on the driest and most sheltered part of the field, and removed on to fresh ground every day. By this means the animals lie on clean land, which, with shelter, will contribute greatly to their health and well-doing; and will, at the same time, enable the shepherd to attend to those Ewes which may require assistance, for in the darkest night, when provided with a lantern, he will be able to discern them all; nor can the young Lambs, when they fall, escape his observation.

By this mode of proceeding, the shepherd can at every visit remove all those Ewes or Lambs which require such care to a place of greater security; for it often happens, when we get a heavy rain, that it is necessary to take them to a hovel or covered shed. When the Lambs are perfectly strong, and the Ewes

healthy, it will not be necessary to put them under cover, for should the weather be very wet, it is generally mild at the same time, and I have usually found them do well thus managed when they have been well kept.

The best Grass upon the farm having been reserved, both in Wheat stubbles and the young Clovers, the Ewes, with their Lambs, should now be placed upon this food, taking care to feed the Clovers at the day time, and the Wheat Eddishes during the night, as the former would receive damage by the stock feeding during the night-frosts; and the latter furnishes the best lay and shelter for the young Lambs.

In this manner, if the Italian Rye Grass has been provided for them, as before directed, the Ewes will give the greatest quantity of milk, and they may be kept upon these Grasses until the Lamb is a month or five weeks old with immense advantage; for the Lambs will be found, at the end of that time, in the best possible condition. At a month old the Ram Lambs should be castrated. There are two methods pursued; one called drawing, which is done whilst the Lamb is from a week to ten days old; the other called cutting and searing, which may be effected with advantage after the Lamb is a month old. I prefer the latter plan, as it is much safer; and the Lambs, when arrived at maturity, will be found more fleshy; and (the prime parts of the animal being more perfect) they will be better appreciated by the Purveyor. When the Lambs have attained the above-named age, they, as well as the Ewes, should be taken from the grass and placed upon root-feeding. At this age the Lamb begins to require food in addition to its mother's milk; and for the benefit of the Ewe it is desirable that the Lamb should have it; for although the Lamb would go on and improve up to the age of eight or nine weeks' old without artificial aid, yet the condition of the mother would be greatly reduced. And as it is customary to fat the Ewe and Lamb at the same time, I consider it necessary that they should both be advanced by the best known means from the time the Lamb has attained the age of five weeks.

In order to do this, I recommend the following method (which is, indeed, my own practice):—Previous to commencing the feeding of roots, whether they consist of common Turnips, Swedes, or Carrots, they should be stacked or heaped in readiness for consumption about a week or ten days before being required for use. This will give time for the work to be kept forward should bad weather supervene, which may otherwise prevent the process of lifting the crop, and thus stop the system of feeding. The advantage of this mode of feeding depends very much upon the roots being cut and placed in troughs, both for the Ewes and Lambs, which has enabled parties occupying comparatively cold and heavy land to keep this early stock. Previous to the introduction of the cutter invented by Mr. Gardener, the forward Ewes and Lambs were kept almost exclusively upon the driest soils, where the Turnips could be consumed upon the land without loss; but it is now, however, rendered quite practicable, and, indeed, advantageous, to keep them upon nearly all soils where the

climate is favourable, except cold clay soils, lying flat, and unable to get rid of the water. Indeed, it is now a well-ascertained fact, that some of our heaviest clay loams, which feed badly in the winter months, produce roots of the best quality; and with the plan of trough-feeding, these soils, under particular management, will produce the best stock, owing to the great feeding value of the roots grown upon them.

In commencing to feed Ewes and Lambs with roots, it is of the greatest importance that the Lambs should feed in advance and separate from the Ewes. It is, therefore, necessary, that what is called a lamb-gate should be used, with space between the rollers, to allow the Lamb to pass through freely, without being sufficiently wide to admit the Ewes. In entering a field of roots, it is best to commence feeding in the lowest part, for two reasons; firstly, because the stock always seek the highest land to lie upon, and as the hurdles are advanced they will continue to follow, leaving their dung with regularity; secondly, the Lambs, particularly whilst young, will always draw through the gate in advance of the Ewes (to receive separate feeding) much better when the folding ascends the hill, than they will when the hurdles are advanced down the incline of the field.

I must now state the best method of feeding. The Lambs should be fed first, as this will draw them away from the Ewes; and otherwise, they are apt to contract the habit of feeding with them, which is objectionable, because the Ewes receive the coarser food. Feeding should commence as soon as the shepherd can see in the morning, giving the Hay first, both to Lambs and Ewes; after which, the troughs should be filled with cut roots, taking care to have them cut finest for the Lambs, which is done by passing them twice through the cutter, which plan reduces the food into a state resembling dice, in which state the Lambs can readily consume it, and are induced to feed at the earliest period, without loss of time, and without waste. As soon as the troughs have been supplied with cut roots, then proceed to give Oil-cake and Peas, the quantity to be regulated by their wants, always taking care to allow them as much as they will eat. To prevent waste, let the Oil-cake be broken fine; about the size of a Horsebean is the best size; otherwise great waste will occur, for the Lambs, whilst young, will take large pieces up and drop them outside the troughs, where it is trodden under and wasted. To induce them to eat Cake, or Peas, at first, it is sometimes necessary to mix a small portion of common salt with it. The Ewes should next receive their allowance of Cake, but without any Peas, commencing with a quarter-of-a-pound per day, the half of which should be given at this time, the other half just before the last bait of roots in the evening. Roots should be given at times during the day, and the troughs quite filled at night.

JOSEPH BLUNDELL.

(To be continued.)

PTARMIGAN FOWLS.

As you have enlarged upon the Ptarmigan Fowls, and pronounced, what I hold to be, an unmerited and erroneous judgment upon them, I call upon you, in common fairness, to allow me in your columns to protest against that judgment. I will not stop to remark upon the universal admiration they excited on first appearing in the summer, on the prizes they took everywhere, nor on the encomiums passed on them in your columns, and those of other periodicals; nor will I stop to ask whether there is no jealousy entertained against them; but I will pass on to notice your remarks.

I quite agree that merits, in an economical point of view, are the first points a poultry judge should look to. Now, let us analyse the Ptarmigans. Nobody denies their beauty, which, I affirm, is second to none; nor has any judge of fowls, in my hearing, denied the purity of breed. The name given them, "The Ptarmigan, or Grouse-footed Polands," amply describes them as a distinct variety of the Poland class—then what do I object to? I protest against the paragraph—"though, as a profitable fowl, their claim to distinction may be questioned." I protest against you, or any poultry judge, passing a sweeping condemnation of this kind, on a new variety of fowls, which you or they have never kept, and, consequently, the merits or demerits of which you have no possibility of knowing. And further, I say that such a system is unjust; inasmuch as the importers of new varieties are by it condemned to the mercy of individual caprice in the persons of men by whose opinion the poultry world are, in a great measure, guided. I will contrast the Ptarmigan and the White Poland, and I will ask, in what does the latter excel the former? Certainly not in beauty nor in purity. I shall be told, as egg-producers. But those who have kept the Ptarmigan will tell you, that it is a very prolific fowl, laying a fair-sized egg of a delicious flavour, and though, perhaps, there might be some remorse at slaughtering so pretty a creature, yet once on the table, it would thence gain additional favours.

The matter, in my mind, is reduced to two points. Those who condemn the fowl must either say, "You owners do not tell us the truth about the birds;" or they must confess their opposition to be founded on mere prejudice, without any facts to guide them. As I am sure, Mr. Editor, you do not desire wilfully to injure any breed of fowls in public estimation, I call on you to let this appear in your columns.

I could have enlarged on the very peculiar and vulture-like habits of these birds, their horny beak, so unlike any other known variety, and the fact of their preying on the dead bodies of their fellows, but I will not further trespass on your space.—FREDERIC BERNAL, *Fareham*.

P.S.—I have been much struck to see how even judges differ. At Winchester, in Dorking Chicken, there were 3 pens, which I will call 1, 2, and 3. No. 1 took the first prize, 2 and 3 were commended. The next week, at Southampton, 3 was again commended, 2 was not; and 1, the first prize at Winchester, not noticed! Again, in the extra class, at Winchester, a pen of Andalusians took the first prize, and a pen of White Polands were commended. At Southampton, the same Polands take the first prize, and the Andalusians are not even commended; yet, in each case, the judges were the first men in the country!

[We admit, with Mr. Bernal, that Ptarmigans are very pretty birds, and that they are a distinct breed, and we will grant, on his assurance, that they lay good eggs, and in all other respects are equal to Polands; and then we abide by our published opinion, to which every poultry keeper will assent—"as profitable fowls, their claim to distinction may be questioned." Five of the best judges in England place them even at the best as second to White Polands, and we fear that their prettiness will not save them from the public assenting to that decision.—ED. C. G.]

POULTRY SHOWS.

EXHIBITION OF THE GREAT NORTHERN POULTRY ASSOCIATION.—The second Annual Show of this Society was held at Doncaster, on Wednesday and Thursday, the 30th of November and 1st of December. The exhibition took place in a spacious covered market, recently erected by the corporation; and which, but for the drawback, that it affords

scarcely sufficient light at this dark period of the year, would be one of the most complete places in the kingdom for such a purpose. We congratulated the society and its officers, last year, upon a good, though small, beginning; and we ventured to predict, that with a continuance of the zeal and ability they then displayed, they would soon be able to bring together an assemblage of Poultry inferior to those of few, if any, rival exhibitions. But we confess that we did not expect that in less than a year they would increase their numbers from a little above 200 pens to upwards of 800. Such, however, was the fact; and it is even more satisfactory to be able to assert that there was a corresponding improvement in point of quality.

The pens were arranged in double rows throughout the whole length of the building, and the celerity with which the managers of the show were compelled to execute their work will be apparent, when we state that the market was in use up to a late hour on Saturday night, and on Monday evening 800 pens were ready for their feathered occupants. The pens themselves were spacious, and care was taken to arrange the birds of each class as much as possible on the same elevation, so that none of them should gain an advantage by being placed in a position more advantageous than others—a point too often neglected on such occasions. The only improvement we can suggest for the future, is that the pens should be well whitewashed inside, which may, in some degree, compensate for the deficiency of light in the building.

The other arrangements, under the management of the honorary secretary, Mr. Henry Moore, assisted by an active committee, were in all respects such as to leave very little indeed to be desired; and to these gentlemen, the members of the society, the exhibitors, and the public, are alike indebted for the trouble which they have taken to cater for their benefit and amusement, and for their urbanity and attention during the days of the exhibition.

Although the show was, as we have said, wisely confined to two days, we hope the money taken at the doors will have been sufficient not only to defray all the expenses, but, with the subscriptions, to have a good surplus towards another year.

In noticing the different classes, we shall follow the order of the catalogue, which commenced with the *Spanish*. Of these, some good specimens were shown, and a cockerel, which failed to obtain a prize because the pullets shown with him were inferior to others which were exhibited, was sold for a large price. The *Dorkings*, which came next, comprised some very fine birds, especially those exhibited by the Hon. and Rev. S. W. Lawley, to whom the first prize was very justly awarded. The *Cochin* classes, we must confess, scarcely held their position in such an exhibition as this, for although there were many good birds among them, there were but few which attained to first-rate excellence,—if, indeed, there were any which reached that point. The Buff chickens were the most numerous, and, perhaps, the best class, taken as a whole; they comprised not less than 88 pens, several of which, besides those to which the prizes were awarded, were commended by the judges. We were glad to see the *Malays* muster a few pens; for although we do not think these a very useful breed of fowls, we should be sorry to see one so majestic and well-bred in appearance vanish from amongst us. We now come to the *Game* classes, which were, undoubtedly, the best in the exhibition, and numbered together 126 pens. The whole of the first class (white, and pils) were declared by the judges, and most deservedly, to be “highly meritorious.” We never saw anything in the shape of fowls which more completely combined high breeding, fine condition, and beauty of plumage, than the adult birds shown in this class, and for which the first and second prizes were awarded to Mr. John Hartop, of Barnbrough; and the two magnificent pens of white chickens, which obtained the same honours for their owner, William Hopkinson (a working man, we understand) of Worksop. And even in singling out these, it is fair to add that many of their competitors were very near to them in the race. The next two classes, comprising the Black-breasted and other Reds (old and young) were of almost equal merit, and we did not at all envy the task of the judges who had to determine between their respective claim to the prizes. The Blacks and Brassy-winged were not quite so good, nor

were they so numerous, as their relatives; but the Duckwings, Greys, and Blues, which formed the last classes, were again excellent, and showed that the old English Game fowl is still cultivated in all its purity in this sporting locality, although the days of cock-fighting are gone by. The *Hamburgh* classes were of unequal merit. The Pencilled *Hamburghs* were few, and by no means good; while the Golden Spangled comprised some good pens, and next to the Game the Silver Spangled *Hamburghs* were undoubtedly the best class in the show. It was admitted, on all hands, that a better assemblage of these beautiful birds had never been got together, and the judges evinced their appreciation of their excellence by awarding very numerous commendations besides the prizes allotted to them. The *Polands* included two or three nice pens, but nothing which appeared to us to call for especial remark. A class for “any other distinct breed” included a fine pen of *Grey Cochins*, exhibited under the new-fangled name of “*Brahma Pootras*,” and afforded an opportunity of comparing them with a bird bred by Mr. Bond, of Leeds (one of the judges) from those which he purchased from Mrs. Hoster Williams, at Birmingham, in 1851, under the name of *Grey Cochins*; and except that the latter was a trifle darker in colour, and somewhat larger than the so-called *Brahma Pootras*, we defy any one to tell the difference. The Golden Sebright *Bantams* were numerous and good, and there were a few pens of Silvers also. The Blacks were particularly good; and the Whites little, if at all, inferior. The *Geese* were numerous, but there was nothing among them that struck us as particularly good. The *Aylesbury Ducks*, on the contrary, were one of the best classes in the show, and ran so close, that we are sure the judges must have found much difficulty in awarding the prizes; many of the pens obtained commendations. Among the *Rouens* there were some good pens of Ducks, but certainly none equal to the two for which the first and second prizes were awarded to Mr. Brooksbank, of Tickhill. The *Turkeys* were good classes, and the commendations awarded showed that the judges so considered them. Some good pens of *Pigeons*, and a few fine *Rabbits*, filled up the remaining classes; and Mr. Bond exhibited, as “extra stock,” some *Cochin* chickens inferior to none in the exhibition.

The Judges were Mr. Travis, of York; Mr. Bissell, of Birmingham; and Mr. Bond, of Leeds; all of whom have had much experience in such matters, and they concurred, we understand, in the opinion we have expressed, both as to the excellence of the show itself, and of the manner in which its details were managed and carried out.

A show of Pigs took place at the same time, under spacious tents, erected for the purpose just outside the market house. About 150 pens were entered for competition, and the show was pronounced by competent judges to have been first-rate.

We append the Prize-list in the Poultry Classes.

SPANISH.

Class 1.—For the best Cock and two Hens, exceeding one-year-old. (14 competitors.)

First prize, James Dixon, West Brook-place, Bradford. Second prize, J. H. Smith, Skelton Grange, near York.

Class 2.—For the best Cock and two Pullets, chickens of 1853. (21 competitors.)

First and second prizes, Wm. Batty Mapplebeck, Birmingham.

DORKINGS. (Coloured.)

Class 3.—For the best Cock and two Hens, exceeding one-year-old. (16 competitors.)

First prize, Hon. S. W. Lawley, Esrick Rectory, York. Second prize, Robert J. Bentley, Funningley Park.

Class 4.—For the best Cock and two Pullets, chickens of 1853. (22 competitors.)

First prize, Titus B. Stead, 1, Upper Albion-street, Leeds. Second prize, Sir Thomas W. White, Wallingwells.

DORKINGS. (White.)

Class 5.—For the best Cock and two Hens, exceeding one-year-old. (3 competitors.)

John Maw, Doncaster.

Class 6.—For the best Cock and two Pullets, chickens of 1853. (4 competitors.)

J. Oldham, Long Eaton, Derby.

SHANGHAE. (Cinnamon and Buff.)

Class 7.—For the best Cock and two Hens, exceeding one-year-old. (11 competitors.)

First prize, Henry Ambler, Watkinson Hall, Halifax. Second prize, Thomas Shackle, Hayes, Middlesex.

Class 8.—For the best Cock and two Pullets, chickens of 1853.
(89 competitors.)

First and second prizes, A. Reynolds, Boston. Second prize, Rev. George Hustler, Appleton, Tadcaster. Third prize, Simeon Woodhouse, Bootham Stray, York.

SHANGHAE. (Brown, and Partridge-feathered.)

Class 9.—For the best Cock and two Hens, exceeding one-year-old.
(7 competitors.)

First prize, Rev. George Hustler, Appleton, Tadcaster. Second prize, C. L. Clare, Hindley House, Liverpool.

Class 10.—For the best Cock and two Pullets, chickens of 1853.
(19 competitors.)

No first. Second prize awarded to William Batty Mapplebeck, Birmingham.

SHANGHAE. (White.)

Class 11.—For the best Cock and two Hens, exceeding one-year-old.
(1 competitor.)

George Boothby, Louth.

Class 12.—For the best Cock and two Pullets, chickens of 1853.
(10 competitors.)

Robert Chase, Birmingham.

SHANGHAE. (Black.)

Class 13.—For the best Cock and two Hens, exceeding one-year-old.
(No competition.)

Class 14.—For the best Cock and two Pullets, chickens of 1853.
(7 competitors.)

W. B. Mapplebeck, Birmingham.

MALAY.

Class 15.—For the best Cock and two Hens, exceeding one-year-old.
(6 competitors.)

T. Pearson, Holbeck, Leeds.

GAME FOWL. (White, and Piles.)

Class 17.—For the best Cock and two Hens, exceeding one-year-old.
(13 competitors.)

First and second prizes, John Hartop, Barnbrough. The whole class highly meritorious.

Class 18.—For the best Cock and two Pullets, chickens of 1853.
(11 competitors.)

First and second prizes, William Hopkinson, Worksop.

GAME FOWL. (Black-breasted and other Reds.)

Class 19.—For the best Cock and two Hens, exceeding one-year-old.
(32 competitors.)

First prize, E. Frith, Turner Wood, Anston, Worksop. Second prize, Thomas Craven, Bradford.

Class 20.—For the best Cock and two Pullets, chickens of 1853.
(28 competitors.)

First prize, S. Armitage, Bradford. Second prize, John Hartop, Barnbrough.

GAME FOWL. (Blacks, and Brassy-winged, except Greys.)

Class 21.—For the best Cock and two Hens, exceeding one-year-old.
(7 competitors.)

No first. Second prize awarded to Hall and Co., Doncaster.

Class 22.—For the best Cock and two Pullets, chickens of 1853.
(6 competitors.)

First prize, George Holmes, Thorpe Salvin. Second prize, Hall and Co., Doncaster.

GAME FOWLS. (Duckwings, and other Greys, and Blues.)

Class 23.—For the best Cock and two Hens, exceeding one-year-old.
(19 competitors.)

First prize, Charles Chaloner, Steeley. Second prize, William Smith, Halifax.

Class 24.—For the best Cock and two Pullets, chickens of 1853.
(11 competitors.)

First prize, W. Ludlam, Bradford. Second prize, James Dixon, Bradford.

GOLDEN-PENCILLED HAMBURGH.

Class 25.—For the best Cock and two Pullets, chickens of 1853.
(3 competitors.)

No first. Second prize awarded to James Oldham, Long Eaton, Derby.

GOLDEN-SPANGLED HAMBURGH.

Class 27.—For the best Cock and two Hens, exceeding one-year-old.
(15 competitors.)

First prize, James Dixon, Bradford. Second prize, Thomas Kendall, Goole.

Class 28.—For the best Cock and two Pullets, chickens of 1853.
(19 competitors.)

First and second prizes, Edward Auckland, Doncaster.

SILVER-PENCILLED HAMBURGH.

Class 29.—For the best Cock and two Hens, exceeding one-year-old.
(12 competitors.)

First prize, James Dixon, Bradford. Second prize, Joseph Tuley, Keighley.

Class 30.—For the best Cock and two Pullets, chickens of 1853.
(18 competitors.)

First prize, Joseph Tuley, Keighley. Second prize, Thomas Craven, Manningham, Bradford.

SILVER-SPANGLED HAMBURGH.

Class 31.—For the best Cock and two Hens, exceeding one-year-old.
(17 competitors.)

First prize, W. Ludlam, Bradford. Second prize, M. H. Broadhead, Stubbin, Holmfirth.

Class 32.—For the best Cock and two Pullets, chickens of 1853.
(27 competitors.)

First prize, Wm. Mitchell, Keighley. Second prize, James Dixon, Bradford.

POLAND FOWL. (Black, with White Crests.)

Class 33.—For the best Cock and two Hens, exceeding one-year-old.
(2 competitors.)

Joseph Conyers, jun., Leeds.

Class 34.—For the best Cock and two Pullets, chickens of 1853.
(5 competitors.)

John Cordeux, Barnsley.

POLAND FOWL. (Golden.)

Class 35.—For the best Cock and two Hens, exceeding one-year-old.
(7 competitors.)

Joseph Conyers, jun., Leeds.

Class 36.—For the best Cock and two Pullets, chickens of 1853.
(12 competitors.)

John Hall, Kiveton Park.

POLAND FOWL. (Silver.)

Class 37.—For the best Cock and two Hens, exceeding one-year-old.
(3 competitors.)

C. Rawson, The Hurst, Walton-on-Thames.

Class 38.—For the best Cock and two Pullets, chickens of 1853.
(3 competitors.)

R. J. Lomas, Derby.

FOR ANY OTHER DISTINCT BREED.

Class 39.—For the best Cock and two Hens of any other distinct variety, not named in the above classes, exceeding one-year-old. (9 competitors.)

First prize, George Roothby, Louth. Second prize, John Jacques, Knaresbro.

Class 40.—For the best Cock and two Pullets of any other distinct variety, not named in the above class, chickens of 1853. (11 competitors.)

First prize, W. C. Gwynne, M.D., Sandbach, Cheshire. Second prize, George Boothby, Louth.

BANTAMS. (Gold-laced.)

Class 41.—For the best Cock and two Hens. (16 competitors.)

First prize, Master Godfrey Horner, Charlotte-street, Hull. Second prize, Francis Blagg, South Leverton.

BANTAMS. (Silver-laced.)

Class 42.—For the best Cock and two Hens. (5 competitors.)

First prize, Master Godfrey Horner, Charlotte-street, Hull. Second prize, Geo. Boothby, Louth.

BANTAMS. (Black.)

Class 43.—For the best Cock and two Hens. (17 competitors.)

First prize, Wm. Heaton, Copley Wood, Halifax. Second prize, J. W. Scriven, Throstle-street.

BANTAMS. (White, or any other colour.)

Class 44.—For the best Cock and two Hens. (11 competitors.)

First prize, James Dixon, West Brook-place, Bradford. Second prize, Samuel Armitage, Thornton-road, Bradford.

GEESE.

Class 45.—For the best Gander and Goose. (36 competitors.)

First prize, Wm. Hall, Laughton-en-le-Morthen, Rotherham. Second prize, Edward Day, Thornberry Hill, Sandbeck. Third prize, George Moate, Fenwick.

DUCKS. (White Aylesbury.)

Class 46.—For the best Drake and two Ducks. (30 competitors.)

First prize, Henry Peckett, Carlton Huthwaite, Thirsk. Second prize, H. Ambler, Watkinson Hall, Halifax.

DUCKS. (Rouen.)

Class 47.—For the best Drake and two Ducks. (13 competitors.)

First and second prizes, B. H. Brooksband, Tickhill.

DUCKS. (Muscovy.)

Class 48.—For the best Drake and two Ducks. (7 competitors.)

Godfrey Wentworth, Woolley Park.

DUCKS. (Any other variety.)

Class 49.—For the best Drake and two Ducks. (18 competitors.)

First prize, James Dixon, West Brook-place, Bradford. Second prize, John Hartop, Barnbro.

TURKEYS.

Class 50.—For the best Turkey Cock and Hen, exceeding one-year-old.
(10 competitors.)

First and second prizes, R. J. Bentley, Funningley Park.

Class 51.—For the best Turkey Cock and Hen, hatched in 1853.
(14 competitors.)

First prize, George Haigh, Liphill Bank, Holmfirth. Second prize, B. H. Brooksband, Tickhill.

PIGEONS.

Awarded to John Hartop, for *Archangels*; Robert S. Jewison, for *Jacobins*; R. Royston, for *Balds*, *Owls*, *Nuns*, *Turbits*, *Fantails*, *Pouters* or *Croppers*, and *Barbs*; James Dixon, for *Almond Tumblers*; W. S. Parkinson, for *Dragoons*; John Parkinson, for *black Carriers*; and Master Thomas Moore, for *Trumpeters*.

BEDFORDSHIRE EXHIBITION OF DOMESTIC POULTRY.—This was held in the Corn Exchange, Bedford, on the 30th of November, and two following days. The prizes awarded by the judge, James Henry Catling, Esq., King-street, Portman Square, London, were as follows:—

Class 1.—SPANISH. Cock and two Hens of any age.

1. First prize, W. Hewitson, Flitwick Manor, Amptill. 2. Second prize, E. H. Strange, Amptill. 3. Third prize, Miss H. Emery, Kempston Hardwick.

Class 2.—SPANISH. Cock and two Pullets, chickens of 1853.

2. First prize, E. H. Strange, Amptill. 3. Second prize, E. H. Strange, Amptill. 4. Third prize, E. H. Strange, Amptill.

Class 4.—DORKING (White). Cock and two Pullets, chickens of 1853.

1. First prize, Miss A. M. A. Knapp, Somerby Hall, Oakham.

Class 5.—DORKING (Coloured). Cock and two Hens of any age.

5. First prize, Miss E. Steele Perkins, Sutton Coldfield. 2. Second prize, J. M. Hawkin Turvin, Tetworth Hall, Pottun. 4. Third prize, Rev. F. Thursby, Abington, near Northampton.

Class 6.—DORKING (Coloured). Cock and two Pullets, chickens of 1853.

5. First prize, Rev. F. Thursby, Abington, near Northampton. 12. Second prize, Rev. G. Gardner Harter, Cranfield Rectory. 4. Third prize, Rev. F. Thursby, Abington, near Northampton.

Class 7.—COCHIN-CHINA (Cinnamon and Buff). Cock and two Hens of any age.

4. First prize, Henry Gilbert, 17, Upper Phillimore Place, Kensington. 3. Second prize, James Cattell, 53, Worcester-street, Birmingham. 2. Third prize, Christopher Rawson, Walton-on-Thames.

Class 8.—COCHIN-CHINA (Cinnamon and Buff). Cock and two Pullets, chickens of 1853.

10. First prize, Miss H. Emery, Kempston Hardwick, Beds. 13. Second prize, John Emery, Kempston Hardwick, Beds. 11. Third prize, Miss H. Emery, Kempston Hardwick, Beds.

Class 9.—COCHIN-CHINA (Brown and Partridge-feathered). Cock and two Hens of any age.

2. First prize, John Forrest Chater, Haverhill, Suffolk.

Class 10.—COCHIN-CHINA (Brown and Partridge-feathered). Cock and two Pullets, chickens of 1853.

7. First prize, B. F. Matthews, Asylum, Bedford. 5. Second prize, William Burton, Northill, Beds. 4. Third prize, John F. Chater, Haverhill, Suffolk.

Class 12.—COCHIN-CHINA (White). Cock and two Pullets, chickens of 1853.

2. First prize, Rev. George Calvert, Beeby, near Leicester. 3. Second prize, E. Burnaby, Baggrave Hall, Leicestershire.

Class 13.—MALAY. Cock and two Hens of any age.

1. First prize, Thomas S. Trapp, Bedford. 3. Second prize, James Oldham, Long Eaton, Derbyshire. 2. Third prize, Thomas Sheen, Aylesbury.

Class 14.—MALAY. Cock and two pullets, chickens of 1853.

3. First prize, Thomas S. Trapp, Bedford. 1. Second prize, Thomas S. Trapp, Bedford.

Class 15.—GAME (White and Piles). Cock and two Hens of any age.

3. First prize, James Howard, Bedford. 2. Second prize, Henry Thurnall, Royston. 1. Third prize, E. H. Strange, Amptill.

Class 16.—GAME (Black-breasted and other Reds). Cock and two Hens of any age.

7. First prize, Henry Thurnall, Royston. 1. Second prize, Charles Barnett, Esq., Stratton Park, Biggleswade. 9. Third prize, R. W. Wilson, Stanford le Hope.

Class 17.—OTHER VARIETIES. Cock and two Hens of any age.

1. First prize, Theed W. Pearce, Bromham Road, Bedford. 3. Second prize, Henry Thurnall, Royston.

Class 18.—GOLDEN-PENCILLED HAMBURGH. Cock and two Hens.

9. First prize, James Howard, Bedford. 6. Second prize, James Howard, Bedford. 2. Third prize, E. H. Strange, Amptill.

Class 19.—GOLDEN-SPANGLED HAMBURGH. Cock and two Hens.

1. First prize, Joseph Jorden, Waterfall Cottage, Birmingham. 2. Second prize, Joseph Jorden, Waterfall Cottage, Birmingham.

Class 20.—SILVER-PENCILLED HAMBURGH. Cock and two Hens.

1. First prize, Joseph Jorden, Waterfall Cottage, Birmingham. 14. Second prize, James Howard, Bedford. 10. Third prize, G. Roberts, Amptill.

Class 21.—SILVER-SPANGLED HAMBURGH. Cock and two Hens.

3. First prize, Christopher Rawson, Walton-on-Thames. 2. Second prize, Joseph Jorden, Waterfall Cottage, Birmingham. 5. Third prize, E. H. Strange, Amptill.

Class 22.—POLAND FOWL (Golden, with or without Ruffs or Beards). Cock and two Hens.

1. First prize, John Trapp, Bedford. 2. Second prize, John Trapp, Bedford. 3. Third prize, John Trapp, Bedford.

Class 23.—POLAND (other Varieties). Cock and two Hens.

1. First prize, Christopher Rawson, Walton-on-Thames. 4. Second prize, E. H. Strange, Amptill. 3. Third prize, E. H. Strange, Amptill.

Class 24.—FOR ANY OTHER DISTINCT BREED. Cock and two Hens.

6. First prize, Miss H. Emery, Kempston Hardwick. Hatched May. 5. Second prize, Rev. George Calvert, Beeby, near Leicester.

Class 25.—MIXED BREEDS. Cock and two Hens of any age, the Cross to be stated.

6. First prize, Thomas Sheen, Aylesbury. 8. Second prize, Charles Howard, Biddenham.

Class 26.—BANTAMS (Gold-laced, Silver-laced, White, Black, or any other variety). Cock and two Hens.

Gold-laced.

1. First prize, Christopher Rawson, Walton-on-Thames. 9. Second prize, Matthew Leno, jun., Hempstead, Herts.

Silver-laced.

10. First prize, Matthew Leno, jun., Hempstead, Herts.

White.

12. First prize, Matthew Leno, jun., Hempstead, Herts.

Other Colours.

14. First prize, John Felts, Biddenham, cottager, recommended by Charles Howard, Biddenham. 15. Second prize, F. Lavender, Biddenham.

Class 27.—PIGEONS. A Pair.

1. Christopher Rawson, Walton-on-Thames. Carriers, Jacobins, Fantails, and Runts. 6. Henry Child, Sherbourne Road, Birmingham. Yellow Owl, Black Bald, Archangel, and Yellow Turbit. 16. John Trapp, Bedford. Nun, and French Nun. 24. William Woods, 26, Park Place, Kennington Cross, London. Black Mottled Trumpeter, and Almond Tumbler. 34. F. Lavender, Biddenham. Pouter.

Class 28.—GESE. Gander and two Geese.

2. First prize, Mrs. Harvey, Ickwell Burry, Biggleswade. 1. Second prize, Christopher Rawson, Walton-on-Thames.

Class 29.—DUCKS (White Aylesbury, Drake and two Ducks).

5. First prize, John Weston, Oxford Road, Aylesbury. 6. Second prize, John Weston, Oxford Road, Aylesbury. 10. Third prize, Charles Howard, Biddenham.

(Whole class highly meritorious.)

Class 30.—DUCKS OF ANY OTHER VARIETY. Drake and two Ducks.

7. First prize, T. W. Pearce, Bromham-road, Bedford. 12. Second prize, W. Hodgkinson, Gough Hill, Birmingham.

Class 31.—TURKEYS. Turkey Cock and two Hens.

2. First prize, E. Burnaby, Baggrave Hall, Leicestershire. 1. Second prize, Christopher Rawson, Walton-on-Thames.

EASTERN COUNTIES' POULTRY EXHIBITION. — Norwich, though somewhat late in establishing a Poultry Exhibition, has at length set about it in earnest, and the signal success attending the first show, held during the present week, is sufficient to justify its promoters in continuing it annually.

We believe we are not far from the mark in saying that the Corn Exchange opened on Tuesday with an actual expenditure of £300 by the Committee; this, we rejoice to say, has all been repaid, and has left, besides, a very splendid surplus.

The arrangements for the classification and cleanliness of the fowls were no less creditable to Mr. Oury and Mr. S. Daynes, upon whose shoulders devolved this, and a very large portion besides of the really hard-work which Poultry Show Secretaries must make up their mind to if they wish to avoid a failure and to continue the exhibitions. In the catalogue every exhibitor's name was placed alphabetically—a great convenience to the public when searching for a name in classes, comprising, as one did, upwards of 100 names. The judges award of prizes was also to be seen at a glance, from one end of the room to the other, by the adoption of large cards of various colours, to distinguish the first, second, and the third awards, and by splendid rosettes to mark the Committee's prizes. But what was of more importance, was the great attention paid to insure cleanliness, and, consequently, a freedom from that effluvia which has deterred many from attending exhibitions of this kind. Perhaps at future shows the calico divisions between the pens will be superseded by those of thin board; this would render it impossible for the birds to mix, or fight with each other, as they will do when the sunshine displays the shadows of adjacent competitors, or, as was the case here with the game-cocks, on attempting to light the gas fully on Tuesday evening.

We hope that the intentions of the promoters of this show may be realized in giving an impetus to the rearing of the best breeds of domestic poultry in our farm-yards. The cost of keeping Cochins especially has the great merit of cheapness to recommend them, as it was a fact admitted to us by three or four of the most eminent breeders at the show, that they did not cost them, charging the utmost market value for what they consumed, more than 1½d. per head per week. Their weight was great, considering their age, and farmers might rear birds weighing from six to seven pounds each, at a cost of about 1s. 6d. to 2s.; a very important consideration when butcher's meat was 7d. to 8d. per pound. We asked a highly practical man, and at the same time one of the largest breeders of Cochins, whether he had ever made a minute calculation as to the outlay; he assured us he had done so for several months, and was persuaded the amount named was the outside, and he added—"I never make the slightest difference as the shows approach; they are taken up just as they run." This gentleman's young birds were among the best shown.

For the foregoing extracts we are indebted to the *Norfolk Chronicle*, but we have received several commendatory letters, but, at the same time, requesting us to call the attention of the committee to two great errors.

"All was well managed," says one correspondent, "with the exception of having a military band playing constantly under the same roof with the fowls. It almost killed some of them with fright." This error has, probably, wrought its own cure, for the noise of a brass band, mingled with the voices of visitors, and the clamour of Cocks, Turkeys, and Geese, must have been enough to drive away all but the deaf. The graver error, was having "An Evening Entertainment." It might be entertaining to the visitors, but most injurious to the birds and their owners. The excitement caused to the birds by the gas and music combined is described by our correspondent as terrible. Moreover, it was a violation of confidence to have it, for those who sent birds there were not pre-informed that they would have to go through such an ordeal.

PRIZE LIST.

JUDGES.—Mr. John Bailly, Poultry Dealer, London, and Dr. Horner, of Hull.

COMMITTEE PRIZES.

The best General Collection of Poultry, Hon. Mrs. F. Astley, Swanton House, Thetford.

Class C.—For the best *Shanghae Cock* of any age or colour, shown separately, J. Fairlie, Esq.

Class C.—For the best *Shanghae Hen*, of any age or colour, shown separately, C. Punchard.

SHANGHAE.

Class 1.—First prize, J. Fairlie, Esq. Third prize, C. Punchard. Second prize withheld.

Class 2.—First prize, H. Gilbert, Kensington. Second prize, C. Punchard. Third prize, H. English, Kerdiston.

Class 3.—First prize, C. Punchard. Second prize, T. Bridges, Croydon.

Class 4.—First prize, J. Fairlie, Esq. Second prize, Mrs. J. Chater, Haverhill. Third prize, J. Fairlie, Esq.

Class 5.—First prize, W. C. Reynolds, Yarmouth.

Class 6.—First prize, Rev. J. Micklethwaite, Horstead. Second prize, Dr. Allen. Highly commended, Dr. Allen. Commended, C. Rawson, Walton-on-Thames.

Class 8.—First prize, E. H. L. Preston, Esq. Second prize, C. Rawson.

SPANISH.

Class 9.—First prize, The Hon. Frances Astley. Second prize, C. Rawson.

Class 10.—First prize, Rev. P. Gardon, Cranworth. Second prize, The Hon. Francis Astley. The whole class very highly meritorious.

MALAYS.

Class 11.—First and second prize, J. Monsey, Norwich.

Class 12.—First prize, J. Oldham, Long Eaton, Derby. Second prize, Isaac C. Dowling, Yarmouth.

POLAND.

Class 13.—First prize, C. Rawson.

Class 14.—First prize, F. Astley, Burgh Hall. Second prize, R. S. Howe, Palgrave, Diss.

Class 16.—First prize, C. Stephenson, Brixton.

Class 17.—First prize, H. Youell, Yarmouth. Second prize, Jones Parkins, Fulham.

Class 18.—First and second prizes, H. Youell.

DORKING.

Class 20.—First prize, Rev. E. R. Benyon, Bury St. Edmund's. Second prize, T. W. Rust, Stowmarket.

Class 21.—First prize, C. Rawson. Second prize, The Hon. Francis Astley.

Class 22.—First prize, The Hon. F. Astley. Second prize, James Lewry, Handcross.

GAME.

Class 23.—First prize, G. Groom, Norwich. Second prize, A. Thorpe, Norwich.

Class 24.—First prize, J. Monsey, Norwich. Second prize, J. Buckley, Desford, Leicester.

Class 25.—First prize, J. Monsey. Second prize, T. Rix, Norwich.

Class 26.—First prize, James Monsey. Second prize, Geo. Ellis Bury St. Edmund's.

Class 27.—First prize and second prize, James Monsey.

Class 28.—First prize, James Monsey. Second prize, W. Cutts, Shottesham.

HAMBURGH.

Class 29.—First prize, Henry P. Dowson, Geldestone. Second prize, James Oldham, Long Eaton, Derby.

Class 30.—First prize, E. P. Archer, Stowmarket. Second prize, Rev. J. W. Freeman, Stowmarket. Class meritorious.

Class 32.—First prize, Henry P. Dowson, Geldestone.

Class 33.—First prize, W. Pott Pillans, Swaffham. Second prize, the Hon. Frances Astley.

Class 34.—First prize, the Hon. F. Astley. Second prize, Charlotte Astley, Burgh Hall. The whole class highly meritorious.

Class 35.—First prize, Rev. T. L. Fellowes, Beighton. Second prize, C. Rawson.

Class 36.—First prize, Rev. T. L. Fellowes. Second prize, Henry P. Dowson.

DISTINCT BREEDS.

Class 37.—First prize, John Fairlie. Second prize, Dr. Burney, Brockhurst Lodge, Gosport.

Class 38.—First prize, Charlotte L. Astley. First prize, Parkins Jonas, Fulham. Second prize, W. G. Vivian, Singleton.

BANTAM.

Class 39.—First prize, H. D. Palmer, Southtown. Second prize, The Hon. Frances Astley.

Class 40.—First prize, James Monsey. Second prize, Henry D. Palmer, Yarmouth.

Class 41.—First prize and second prize, James Monsey.

Class 42.—First prize, Rev. P. Gardon. Second prize, Kate Chamberlain, Catton.

GEESE.

Class 43.—First prize, John Fairlie. Second prize, Frederick Astley.

DUCKS.

Class 44.—First prize, Rev. J. Bulwer. Second prize, C. Rawson.

Class 45.—First prize, Mrs. J. Dutton, Bury St. Edmund's. Second prize, John Fairlie.

Class 46.—First prize, Charles Punchard. Second prize, G. Drake, Catton.

TURKEYS.

Class 47.—First prize, Abraham Cannell, Cringleford. Second prize, Barnes Caldecott, Ormesby House.

Class 48.—First prize, John Fairlie. Second prize, Abraham Cannell.

GUINEA FOWLS.

Class 49.—First prize, Wm. Copple, Prescott. Second prize, John Fairlie.

PIGEONS.

Class 50.—Class A.—*Carriers*. Alfred Master, Esq., Norwich.

Class B.—*Almond Tumblers*. Mr. George Allen, Norwich.

Class C.—*Pouters and Croppers*. Mr. W. F. Orfeur, Norwich.

Class D.—*Balds, Beards, and Mottled Tumblers*. Mr. W. Taylor, Norwich.

Class E.—*Archangels*. Christopher Rawson.

Class I.—*Jacobins*. Christopher Rawson.

Class K.—*Fantails*. Edward H. Everard, Bury St. Edmund's.

Class L.—*Trumpeters*. Christopher Rawson.

Class N.—*Runts*. Christopher Rawson.

The numbers attending on the several days were, on Tuesday (half-crown day), 1,300; Wednesday, 2,200, in the evening, 400; and on the third day, 1,300. As near as can be at present ascertained, there will be a surplus of about £300, after paying all expenses, and exclusive of the sale of books and prize lists, which must amount to a very considerable sum.

THE SALE.

Soon after one o'clock, Mr. Barnard ascended the platform in the Hall, and commenced the sale, but the noise was so great from the crowing of the cocks, and the crowd of people, that he soon found that he could not be heard. The sale was then adjourned to the Royal Hotel, and the large room in a short time was pretty well filled. In the Shanghae classes there were few birds, and out of 201 lots, only eighteen were sold, and these at very low prices, the reserve birds in those cases being withdrawn, except for the prize fowls. The only prize fowls sold were Mr. Micklethwaite's white Cochin chickens, for the reserve price £15, to Dr. Allen. Half-a-dozen lots in Class 2 (the best cock and two pullets) Cinnamon or Buff, went for 11s., 12s., 13s., 14s., and 15s. each, but little more than common market price.

In the *Spanish* classes, twenty-six lots were catalogued.—There were very few birds, and only two lots sold, one of six-months-old, black chickens, at 28s., and one of nine-months chickens, at 23s. In the classes of *Malays*, twenty-four lots were catalogued, and only bids for three, which were sold without reserve, at very low prices. There was

not a bid for any of the prize fowls in those classes. There were twenty-two lots in the *Poland* classes, not one of them bid for—and out of fifty-nine lots in the *Dorking* classes, only two in classes 20 and 21 were sold, the reserve prices having been withdrawn—one lot of chickens at 30s., and another exceeding one year at 25s. In class 22 of *coloured Dorkings*, four lots were sold. The Hon. Mrs. Astley's prize *Dorkings* were knocked down to Mr. Fairlie, of Cheveley Park, at six guineas.

There were forty-nine lots of *Game* birds catalogued, and not a bid for any one of them. The *Hamburgh* classes comprised sixty-seven lots, and only two were bid for. One lot of Gold-pencilled chickens sold for 10s., and another of Silver-pencilled for 15s. The classes of distinct breeds comprised forty-seven lots, and only one bid for and sold for 10s. There were fifty lots in the *Bantam* classes, and only two were sold without reserve, at 15s. each. About seven lots of *Geese* were without a single bidder, pen 2, which gained the first prize, sold for £20. These *Geese* were the prize fowls belonging to Mr. Fairlie, the purchaser being Lord William Powlett. Three lots of *White Aylesbury Ducks* were sold without reserve, at 12s. each. In the class of *Rouen*, nine lots had not a bidder, and in class of any colour, one lot was sold without reserve for 8s., and another at the reserve bid of 30s.

In the classes of *Turkeys*, comprising twenty-two lots, only four were sold at 42s., £3 3s., £3 9s., and £3 12s. One lot of *Guinea Fowls* went for 6s., and another for 10s. The *Pigeons*, comprising fifty-six lots, attracted no bids, and all the lots in the extra stock were left unsold.

TO CORRESPONDENTS.

SPANISH FOWLS.—Exception has been taken to a sentence in our report of the late Winchester Poultry Show, where we expressed an opinion that “a dark line of feather between the face and comb,” is a fatal objection to the Spanish fowl. Now, had we said “the presence of black feathers,” we should unquestionably have thus referred to a standard to which not one bird in ten thousand can attain, since occasional short bristly feathers are usually, indeed, we might almost say, always, visible above the eye of even the best birds. But, widely different from this is the continuous “black line of feather,” of which we expressed such strong disapprobation, and which, we still venture to think, will meet with as little favour from those to whom the task of arbitration at our different Poultry Shows may be confided, as we ourselves are inclined to bestow. A correspondent has intimated to us his belief that the best “white faces,” in this family, have been subjected to various operations, such as “shaving and plucking,” for the removal of such intrusive feathers. In answer to this, we would observe, that beyond all doubt, instances may be found where persons have been willing to hazard the disqualification of their birds, justly consequent on the discovery of such trickery; but when it is asserted that the success of the most celebrated strains, during the last two years, has been thus achieved, our unqualified and emphatic denial of the imputation must be at once pronounced. It has been also stated, that disappointment need not be felt at Spanish Chickens failing to realize the expectations of breeders whose stock has been the most carefully selected, since a very advanced age, it is asserted, is requisite for the full development of their principal characteristic, the white face. Until after the first moult, an opinion on the merit of Spanish fowls in this respect is, to a certain extent, speculative; and, we further believe, that progressive improvement may extend into the third year; but beyond this last period, we imagine that there are but very few instances where the bird, in subsequent seasons, ever appeared to greater advantage in respect of face. An alleged case of a Spanish hen not showing the white over the eye till nearly four years old must be a most unusual occurrence, and calculated, we fear, to disappoint those whose patience in reliance on this theory might carry them on to a fourth year which should produce so satisfactory, yet marvellous, a metamorphosis in their previously imperfect specimens. But more on this head when Birmingham has summoned the chosen of this race to the arena of Bingley Hall.—W.

WEIGHT OF GESE.—Mr. Trotter says, “When I gave you the weights of my *Ganders* of this year's hatching, I had no other motive than to induce others to do the same. Some breeders of *Geese* make weight their leading aim; and if they state the weights of their old or young birds, I am under the impression that the information would be appreciated by many of your readers. But I might add, that I do not consider the large breeds of *Geese* are so profitable as the smaller, unless it can be proved that the latter consume more food in proportion, as the difference in market price is not equal to the difference in their weights.”

CRYSANTHA MAGNIFLORA (W. X. W.).—There is a genus of New Holland plants, nearly allied to *Epacris*, which Dr. Brown named *Crysanthe*, many years since; but we are not aware that Brown ever used the term *magniflora* as a specific name—*magniflora* is more commonly used by florists; and, unless you had some collateral proof to show that the word was used rather by a botanist, we would believe *crysanthe* originated with some provincial florist, and that he meant *Chrysanthemum magniflorum*. We see worse spelling of names very often from a higher grade of writers in our own correspondence.

FLOWER BEDS (*Aserculus*).—We never object to any fancy design for flower-beds, and, in some situations and spare places about a large garden, we like to see them, if they do not seem to intrude on better things too much. When we see a room papered with a pattern in which

Dahlias grow out of *Roses*, and *Gilliflowers* out of *Thistles*, we pretend to be in a great hurry, for we cannot long endure the torture of so much outrage. It is just the same when we see an attempt made to imitate anything from nature or art in a fancy flower-garden, if the thing in question is not done to a nicety after the model. Your plan is to be the stem of a Vine, run along the ground in a slight serpentine fashion; this stem is made of dwarf Box a foot wide; the leaves are to come out right and left, as in the Vine; the footstalk to be of Box, and the outline of the leaf in Box, like a common edging, and the blade of each leaf is to be a flower-bed; but you have a peach leaf and a maple leaf alternately on each side—what plant in this world grows that way? Let all the leaves be those of some certain plant, in the name of Linneus, if for nothing else; and, depend upon it, they cannot find fault with your design, though they might not like it. The right scent is needed in more wealthy places than yours.

VARIOUS (X. Y. Z.).—See pages 128 and 129. At the third paragraph from the bottom of the second column of the last page, the words *moist heat* should be *much heat*. It is always very pleasing to find that we are giving satisfaction. We now see clearly how you can manage so many sashes, seven feet by four feet, as you intend them to be for a hothouse, some other day. By looking to an article a short time ago, you would see, that by merely confining your Vines to the rafters, four feet apart, you might have good crops of Peaches, where they stand on what then would be the back-wall, provided you did not force much. We now thoroughly comprehend how your sashes are fixed, and though we do not know exactly the patent ventilator of which you speak, it matters little how it is done, provided the heated air is prevented accumulating at the centre of the enclosed space at the top, even though open at the bottom and at both ends. But the mode of preventing this may be done very simply, such as by having some moveable panes there, such as you describe for enabling you to introduce the syringe to wash the trees. Now, in a length of four yards, open at the both ends, we should think one large square in the central light of the three would be sufficient to prevent any danger. In a length of six yards, two would be requisite, or even three; and in that of eight yards, four, at least, would be required. There would be no necessity for putting one in either of the end sashes, as the open sides would prevent all danger there. We, ourselves, should like these ventilating mediums as safety valves. When we spoke of allowing glass to stand before the trees in winter, and making it opaque then, our object was *not* to ripen the wood; we presumed that to be done before the glass was clouded, to shut out the sun's rays, and thus retard the tree in its blooming. You might let down the blind that protects your riders on standards on sunny days, in winter and very early spring, for a similar purpose, as the longer such fruits can be kept from blooming, the more safety there will be for a crop, as the blossoms will not be forced to expand by a sun-heated wall when there is little warmth in the ground to keep up a flow of juices. You are quite right in applying fires to your walls in autumn, and putting them out as soon as the wood is ripened. The less excitement after that from sun, or otherwise, the better, until genial weather comes in spring. Your laying bare the roots for a short time can do no harm; it will stop growth. Neither light, nor much air, is of any consequence to *Figs* after the leaves are fallen, until growth commences the following spring. A little straw twisted among the branches, and then all covered with mats, or cloth, would be much safer than your glass sheets open at the ends. We have seen *Figs* killed in houses under glass without heat. Your sashes so fixed would be valuable for accelerating the *Figs* when placed on after growth had commenced, until July, and then, perhaps, the *Figs* would be as well without them; but in September, they would help again to ripen the crop and harden the wood. In these cases, ventilators would be required in all the sashes except the outside ones, and in them, likewise, if you shut up the ends. *Figs* like plenty of water when growing and fruiting, and little when in a state of rest; but the quantity, even in the former case, must be greatly regulated by the depth the trees are planted, and the open or close character of the soil. So long as your trees make short stubby shoots, well stored with fruit, you need scarcely ever water them in the growing season; but if the reverse, act accordingly. We are very sorry you should have suffered so much from *Wasps* in your Bee department. Perhaps some of our friends will turn their attention to this subject. Your using the syringe is not new. We have cleared trees of them by the garden syringe, having boys ready to catch every wasp as he tumbled down. With two engines we could manage pretty well to knock them off the fruit, and bring down those that were flying away. We have seen few nests this season, but they were monsters in size. The hot-water is a good thing, but it is advisable to stupify the rogues previously, by firing a fusée of powder and sulphur into their holes, and then covering the holes for a few minutes before digging them out. When this is done, the ground should be smoothed, after burying a bottle half filled with water, with its mouth open, and just level with the surface of the ground. Every wanderer that has escaped will fly in there and be done for. In strong nests we have emptied a bottle several times. An excellent trap is formed of two handlights, and bees hardly ever try it. Some rotting fruit, sour beer, with a little sugar, &c., is put into a saucer; a handlight is placed over it, supported on four bricks at the corners, or any other material more convenient. A few small holes are broken at the very apex of this glass. Another sound handlight is placed over the first, and the place where the one joins the other is secured with a strip of wood, or putty, or clay. As soon as Mr. Wasp gluts himself in the saucer, he flies aloft, gets through the hole in the top, and into the upper glass, where he hums and flies until he dies. I have seen a peck taken out of one of such places.—R. F.

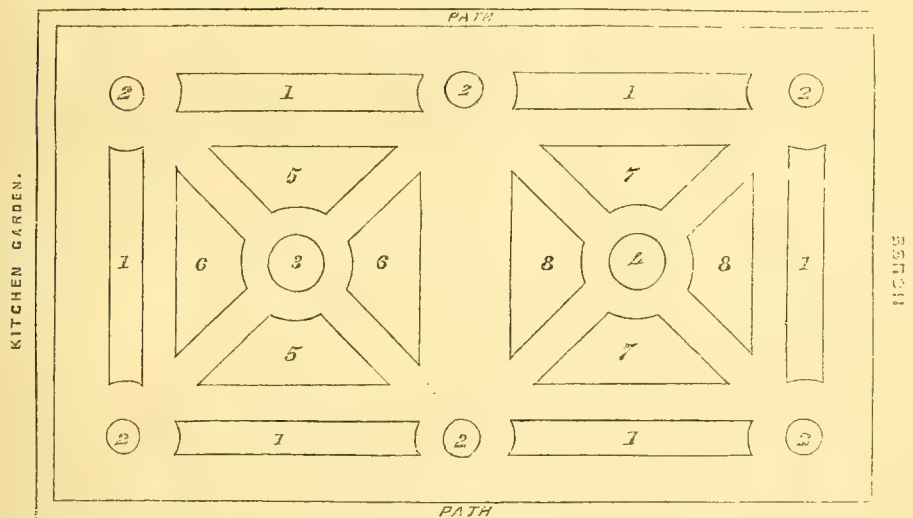
GAFES (J. Rollins).—If this disease arises from worms in the wind-pipe, and the inflammation they produce, we think oil poured down the throat, greasy water for their drink, &c., can have little effect in curing it, for the oil and grease go into their crops.

WEEKLY CALENDAR

M D	D W	DECEMBER 22—28, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
22	Th	Black Duck comes.	29.791—29.738	49—38	S.W.	04	7 a 8	51 a. 3	11 6	22	1 4	356
23	F	Orange-breasted Goosander comes.	29.788—29.724	50—37	S.E.	03	7	52	morn.	(1)	0 31	357
24	S	White Nun comes.	29.789—29.735	56—48	S.W.	09	8	53	0 23	24	0 4	358
25	SUN	CHRISTMAS DAY.	29.733—29.659	52—41	W.	—	8	53	1 42	25	bef. 26	359
26	M	St. STEPHEN.	29.703—29.351	55—45	S.W.	29	8	54	3 5	26	0.56	360
27	Tu	St. JOHN EVANGELIST.	29.396—29.032	54—36	S.W.	—	8	55	4 32	27	1 25	361
28	W	INNOCENTS.	29.789—29.525	54—26	S.W.	—	9	55	6 2	28	1 55	362

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 42.6° and 31.2° respectively. The greatest heat, 58°, occurred on the 25th in 1827; and the lowest cold, 10°, on the 24th in 1830. During the period 116 days were fine, and on 66 rain fell.

FLOWER-GARDEN PLAN.—No. 11.



HERE is a geometric garden for a small space behind a house, by placing it lengthways, as shown; or for a front garden, between the house and the road or street, by putting it crossways, and doing away with the two centre circles (2 2) going up to the front-door, and squaring the ends of the long beds at the top and bottom of the garden.

If the plan is laid longways from the house, the six circles, marked 2, are the best of places for six pillar Roses. The beds marked 1, are for dwarf Roses, and herbaceous plants, Mimuluses, Violets, Pansies, Poppies, Anemones, and all manner of things. Nos. 3 and 4 are for spring early Tulips, as the Van Thols, Golden Standard, Royal Standard, Rex Rubrorum, Marriage de ma Fil, and twenty others besides, if one can get them. The beds 5, 6, 7, 8, to be of Crocuses of sorts, surrounded by Snowdrops, Snow-flakes, Turban Ranunculuses, and, indeed, any of these good, old common things that come on in the spring, and, at least, one of the squares to be with bedding-plants in summer. The two beds, 7, of Tom Thumbs, and bed 8, with yellow Calceolarias, and bed 4, the centre bed, all white; the white variegated Alyssum would be the best, or rather second best. Mangle's variegated Geranium is certainly the best for that bed, but a white Verbena will do.

Then, by looking down on these from a back bedroom-window every morning, and again in the afternoon, when one went up to dress for dinner, and as often at other times as one had need to proceed upstairs, the eye would soon get accustomed to symmetry, and regular arrangement of colours and flowers, under various lights and shades, from the state of the weather; so that we should soon get rid of the vulgar prejudice of scarleting the centres of our flower-gardens for everlasting.

Another great step would be gained by the use of such simple figures so planted. We should shame those who plant in such abominable-shaped beds, as stars, triangles, kidneys, pears, oak-leaf shapes, and goodness knows how many more shapeless beds besides.

I will maintain with all my might, and as long as there is breath in me, that Her Majesty, in all her gardens, has not a single flower-bed of better shape than any in this simple arrangement, nor better planted either; neither has her Grace the Duchess of Sutherland, nor the Honble. Lady Middleton; neither at such public places as Kew Garden, nor that of the London Horticultural Society, will any one find beds one morsel better shaped than these.

I put it thus, because I know that young beginners are not half so much afraid of anything as about the *shape* of their flower-beds, and these observations are only meant for such.

Another thing I have much in view, is to get this new class to take to growing Pillar Roses; and when the older hands see the immense improvement this will produce, they will come round, in time, to give up standard Roses altogether, except of the very strongest kinds, and they will let them grow as big as the Stone Pine of Italy, and something of that shape, and mops, as patterns, will go out of fashion entirely, and for ever.

The above plan may be repeated so as to occupy a much larger surface, as were the blocks of which the Crystal Palace was formed. A plan to show how that may be done is now ready, and will soon appear in these pages.

D. BEATON.

THE December Meeting of the *Entomological Society*, held on the 5th instant, was one of the most numerous attended we have ever seen, shewing the increased interest given to the subject. The President, Edward Newman, Esq., was in the chair. Mr. Westwood stated, that having been afforded an opportunity of examining a living male specimen of the Bee Parasite *Melittobra Andouinii*, he had distinctly seen the ocelli, which are not visible after death.

As usual, a considerable number of new and interesting Lepidoptera were exhibited by different members. Mr. Scott, of Renfrew, sent a new *Cnephasia*, allied to *C. bellana*, from Scotland; Mr. Douglas, specimens of *Yponomeata cerorella*, a brood of the Caterpillars of which had been found on the common Spindle-tree near Wandsworth; Mr. Stainton also exhibited the cocoons of the same species.

Mr. Westwood exhibited a portion of honey-comb, received from an anonymous correspondent, from a hive, the queen of which only deposited drone eggs, which were, also, sometimes placed at random in the cells of workers, causing an irregularity in the arrangement of the series of the latter; the hive, in consequence, became tenantless in the month of September.

Mr. Curtis exhibited a box containing a number of Bees, Wasps, and Sand-wasps, from the South of Europe, received from Signors Passerini and Bertoloni, and Mons. Le'on Dufour. The first-named gentleman had paid considerable attention to the habits of several of these insects, and he was about to publish his observations upon them. He also exhibited some British species of *Cuckoo Flies*, which are parasitic upon the large Saw Flies of the genus *Trichiosoma*, one species of which forms its cocoons upon whitethorns in hedges.

The Secretary announced that the Council had determined to distribute their stock of duplicates of British Lepidoptera among the members, upon application to the Curator.

Mr. Samuel Stevens exhibited a specimen of the rare Beetle *Pogonocerus fasciculatus*, taken by Mr. Foxcroft, in Scotland. Thus confirming the claims of that species to be regarded as a native species. It had previously been reared from the staves of a cask, respecting the place of manufacture of which there was a doubt. Also, a specimen of the new British *Glowworm*, taken by Mr. Foxcroft. It is rather smaller than the common *Glowworm*, with shorter legs. The male has not yet been found.

Mr. Wallace exhibited a new and very beautiful Longicorn Beetle from California, belonging to the genus *Acanthocinus*. Also, a specimen of the very rare Butterfly, *Erycina Octavius*, of Cramer. He also read the completion of his memoir upon the habits of the various species and families of Butterflies which inhabit the valley of the Amazons. In the *Ageronidae* he had observed the noise made by the insect first noticed by Mr. Darwin, but he had only heard it when those specimens were flying together and battling together in the air. Of the *Heliconidae* he had found as many as sixty

or seventy species. The gigantic *Morphidae* and *Brasolidæ* are very slow in flight, the species of *Caligo* flying only at twilight. Of the beautiful family *Erycinidae* he had captured 200 species. They are pre-eminently forest Butterflies, setting on the underside of leaves with their wings expanded. The little *Helicopis*, with gold spots on the underside of its wings, rests with them elevated. Of the *Theclæ*, as many as sixty species had been taken; also, a great number of species of *Hesperidæ*, the only British species of which, known under the common name of Skipper Butterflies, give but a faint idea of the brilliancy and rapidity of flight of the South American species.

Mr. F. Smith read some further notes on the Bee parasite named *Anthophorabia fasciata*, by Mr. Newport, a male of which had been kept alive by him for seven weeks. The insect proves to be identical with the *Cirrospilus Acastor*, of Walker, which specific name must take precedence over the names proposed by Messrs. Westwood and Newport. Mr. Walker had, however, made a mistake in describing a female as a male, with which latter sex he was not acquainted.

The remainder of the evening was occupied with a discussion upon the destructive habits of *Scolytus Destructor*, and the means for preventing its ravages. Captain Cox, who had paid great attention to the subject for several years past, and whose essay on the subjects had received the gold medal of the Royal Botanic Society, brought for exhibition some pieces of the wood of Elm and Ash-trees, the former destroyed by the *Scolytus*, and the latter by *Hylurgus Fraxini*. He entirely opposed the opinion that only trees in an incipient state of disease are attacked by the *Scolytus*, having observed healthy trees destroyed by them in two years, especially mentioning a tree only twenty-eight years old, which had been attacked by at least 280,000, judging from the number of tracks made by the larvæ. It is the custom of the female to make a longitudinal burrow beneath the bark, depositing her eggs at regular intervals; and the young larvæ, when hatched, burrow at right angles across the bark of the tree, by which means the circulation of the sap is entirely prevented, and the tree destroyed. He had been in communication with the Officers of the Woods and Forests in the hopes of inducing them to adopt his proposed remedy for preventing the destruction of the Elms in the public parks, &c., in the neighbourhood of London, but had found them apathetic upon the subject. Old trees, which might have been saved, had been cut down piece by piece, including the finest Elm in the kingdom, which grew opposite Buckingham Palace, and young ones planted in their stead, which, for want of proper precaution, were also attacked, and already nearly killed. He had found that the most efficient mode for preventing the destruction of the trees was to disbark them to a considerable extent, burning the old bark full of the insects, the process inducing a strong growth of new bark. He had also investigated the habits of the Caterpillar of the Goat Moth, *Cossus ligniperda*, so called from the offensive smell which its

larva emits. He had found, that in a plantation, in the Royal Botanical Society's Grounds, in the Regent's Park, out of 240 trees only ninety had been found free from the attacks of that insect. He had found the only available plan was to follow its track, and cut it out of the solid wood, and it was surprising how soon the wounds thus made were entirely healed. A long discussion among the Members ensued. Mr. Newman considered that the *Scolytus* certainly attacked healthy trees; instancing the row of Elms in Camberwell Grove, which he had carefully watched. Mr. Curtis, on the other hand, considered that the trees attacked by the *Scolytus* were previously in a state of disease; especially noticing a row of these trees in Lisson Grove, which had been destroyed, large pieces of the bark falling off. He attributed the attacks of the insect, in this case, to the old age of the trees, which were already in a diseased state. Mr. Westwood supported the views of the late M. Andouin, that the females first brought the trees into a state of disease by attacking them in search for food; and when they became actually diseased they then deposited their eggs in the burrows. The subject was considered of such practical importance that it was arranged to be continued at the next meeting.

MEETING OF THE HORTICULTURAL SOCIETY.—DECEMBER 6, 1853.

THERE WAS a full meeting on this occasion. The room was gay all round with flowers, and the tables were loaded with fruit, Dessert Pears being one of the things for which a pitched-battle was to be fought on that day. Her Majesty's uniform success on this field, has, at last, stirred up the old feudal jealousy of some of the great chieftains. For ages past, it was not considered as a mark of high bearing, or practical superiority on the part of exhibitors, to take the shine out of royalty in this country at horticulturals. Peter Pindar says, that the good old King George III., did not even know as much as that Pears and Apples grew on trees at all. "The first gentleman in Europe" was probably too much so to allow him to beat a subject of his own in the field or garden; and the sailor-king was so much afloat before he hoisted the horticultural flag, that we could not expect him to have much reliance on the "stations" of his standard bearers, so that the magical influence of "turning the tables" remained for the days of Queen Victoria; but no sooner is this influence exerted on the part of her Majesty than it is disputed by her own Privy Counsellors, in the matter of table Pears, and in this race her Majesty came up second best to the winning post by the split of a hair. There is one influence, however, in which her Majesty has no rivals yet—the influence of early rising—she is never behind the appointed time, be it early or late; and if this influence were to be disputed with equal zeal, we should have less cause, or no cause at all, for the heart-burnings about rules and regulations on the part of the Society, from which even Majesty itself cannot be exempted without prejudice to the cause we have in hand. The Duke of Norfolk and the Earl de Grey competed against the Queen for the best six kinds of dessert Pears ready for the table, and two Pears of a sort. The duke was behind time, and lost his chance; and although the early won this time, we have a score against him for being too late, also, not more than ten months back; so

that, *de facto*, as the lawyers say, her Majesty is not beaten yet.

Mr. Hill, of Keele Hall, Staffordshire, competed also in this class with very good fruit. Mr. Langleur, the great Pear-grower, in Jersey, sent seventy-four kinds of named Pears, most of which were very good, but not so fine as those from our own great private establishments. The Horticultural Society itself came out strong with a fine dish of Pears in the sixes; two *Forelle*, or *Trout* Pears in this dish were the richest coloured I ever saw; this is a very small Pear, a famous bearer, quite hardy for a standard, and as good as most of the November Pears, and makes the prettiest dish in a first-rate dessert of all the Pears, if it is dished properly, keeping the bright cherry-cheek-coloured side towards London all the way up. No one who takes a pride in a succession of changes for a shooting party should be without this Pear. It is now altogether out of the fashion to see ladies come down to dinner two nights running in the same dress, when there is company, and the gardener who does not study the fashions, and dress up the dessert table accordingly, ought never to have a dressing for the fruit borders. Mr. Solomons, of Covent Garden, sent foreign fruit as usual, not to compete against home growth. The most beautiful kind of Apple in Covent Garden that day was in this lot—the *Winter Colville*; we shall never excel the French in colouring this beautiful fruit, which looked as if cut out of the purest wax, and then varnished over with a tint between cream and light orange. The colour of the *Dutch Mignonne*, from France, was more orange and perfect than we can hope for here. But, as a sign of the times, we had Pears all the way from Kilkenny; and we were told in the lecture, that if our friends in that part of Ireland, at least, were to make up their minds for a stand up fight in London, they could and would beat the French and the people of Jersey in many kinds of produce, if not always in Pears. It appears, from this competition, that the following Pears are thought by our best gardeners to be all first-rate at the end of November:—*Glout Morceau*, *Passe Colmar*, *Napoleon*, *Marie Louise*, *Beurré Diel*, *Chaumontel*, *Leon le Clerc* (Van Mon's), *Knight's Monarch*, and *Vicar of Wingfield*. *Uvedale's St. Germain*, we are told, is the best stewing Pear after all; but being so monstrously heavy as to require a wall; examples to back this opinion were on the table from the Rev. J. E. Grey, of Wembley Park, Middlesex, one weighing one pound seven ounces, and another, one pound four ounces.

GRAPES.—There were three very beautiful bunches of Grapes in a basket, from Mr. Nash, of Bishop Stopford; a large *Black Hambro'*, a ditto *Muscat of Alexandria*, in beautiful colour, and a *Cannon Hall Muscat*, not ripe, of a greenish-white colour, and we were told that the vines were treated at first by a labourer in a tan-yard, but whether or not the tanner looks after them to this day I know not; they were certainly good enough for the highest dessert table in the land, if the *Cannon Hall* had more sun to bleach the colour. Respecting the new white seedling Grape that was shown on the 18th of last October (page 76), I received the following interesting account from Mr. Busby himself, the gardener who raised it. The Society highly recommended this new Grape, and I subscribed to all they said about it, but I was the only party who doubted the parentage, and now I am confirmed in the opinion that it is a sport and not a cross. I had a similar sport myself, in 1849, the very same season, and also in a *Black Hambro'*, one berry in a bunch being at least three times larger than the largest berry I had ever seen of the kind before. I was so bent on saving this berry, to see what the seeds would come to, that I told Sheppard, the foreman in the forcing department at Shrubland Park, that I would knock his head off if this berry miscarried; two seeds

from it were sown in the spring of 1850, and only one of them vegetated, and when I left Shrubland, in 1851, I told my successor that if he would but fruit that seedling-vine, his fortune, or at least his fame, would be established. But from that day to this I heard no more of it, and I forgot to inquire about it when I was there last September. Whether my opinions on cross-breeding, on sports, on lapses of nature, are right or wrong, they carry a certain weight to the ends of the earth; and if there is one thing more confirmed in my mind than another, from my own experiments, or from the recorded experience of better judges, it is this, that the action of foreign pollen has no more influence on the size, or shape of the fruit, or seed, than that of the magnetic needle. All this has nothing to do with the value of the new Grape. I really and truly believe it to be the best English seedling Grape that ever was produced, with the single exception of the *Esperione*, and I congratulate Mr. Busby on his fortune, knowing as I do, that the same chance was in the hands of a younger man.

"Stockwood Park, Nov. 23, 1853.

"I am glad and obliged for the frank manner you spoke of my seedling White Grape, as it is *really* a fine thing, and I hope to be able, in a year or two, to grow it well, with the help of Providence. I write to tell you the pedigree, as there seemed some doubt about the parentage previous to 1849. It had often struck me that a White Grape, similar in character to the *Black Hambro'*, hardy, a good setter and bearer, and in other respects as well adapted for forcing, was a desideratum worth trying for, so I set to work. Having a *Hambro'* trained up the roof, I had a *Dutch Sweetwater* planted on the back wall, trained down by the side of the *Hambro'*. They were both in flower at the same time, when a little brushing with the camel's hair pencil was all that was done. When the berries of the *Hambro'* began to swell for ripening, or rather when they were ripe, I fancied I could see the operation had been successful in one berry only. That berry then was carefully saved, and the seeds planted in a pot; two plants were the produce; one got accidentally broke, the other, after standing in a pot a year, found a place in a narrow border at the back of a viney, with the permanent vines covering the roof, and bent down the roof. It fruited the first time in August this year, and when the young shows first appeared, so much are they like the *Hambro'*, that I said to my young man, I believe the seedling, after all, will be only a *fac-simile* of the old *Black Hambro'*, its parent. But what was my delight, when it ripened, to see a splendid large white transparent Grape, just the *beau ideal* that I had imagined, with a most delicious flavour, thin skin, hardy, and a good bearer.

"So, you will see there can be no mistake in its parentage, as I have only saved seeds from the *Hambro'*. I have another batch of seedlings from a similar strain, but what they will prove it is impossible to say. [Ten chances to one the berries will be black.—D. B.]—M. BUSBY."

There was a small dish of Cuthill's *Black Prince Strawberry* from Raynham Hall, Norfolk. I was the first who seconded Mr. Cuthill's account of this Strawberry, and I have been very well criticised for doing so; but as I never spare others when I think they are in fault, I do not want to be spared myself on anything I write about—nothing being more likely to bring out the truth than fair criticism. I hold it to be strictly true and correct that this Strawberry is what I and others said in its favour, and also that it is equally true about all that has been said to the contrary. The nature of the soil makes all the difference, judging from my own experience with the *British Queen* and the *Downton Seedling*. The *Queen* I could not grow on chalky soil, and I grew the *Downton*, as the best Strawberry, after better gardeners gave it up in despair; but after trenching that part of the garden where it did so well, I was obliged to give it up also, for try what I would, I could never do any good with it after that trenching. I recollect, some twenty years back, our friend Mr. Errington making enquiries in the *Gardeners' Magazine*

about other people's experience with the Quincestock, and we all know, by this time, that he would as soon plant an Upas tree as a Pear on the Quince; but I also recollect, when old gardeners about Edinburgh, and particularly in the East Lothians, would have no dwarf from the nurseries but on Quince stocks, and that the Quince stock had to be first grafted with the *Virgolouese Pear*, in the nurseries, and then regrafted by the different kinds, or double worked; the first kind, or *Virgolouese*, was a secret then, which no youngster from the country could learn without first paying his "footing" to the propagators—such a dose of raw whiskey as would choak an Englisher. The *Virgolouese* "took" on the Quince as well as it would on a wild seedling Pear stock; then, the union being complete, any Pear would take on the *Virgolouese*. What I want to establish by these old recollections is a better understanding between gardeners and their employers, and between amateurs and their fancy gardens, when things go wrong without the fault of the garden or the gardener, the supposed fault being only the misfortune that all things do not do equally well on all kinds of soils. I do not go to these meetings to give a full report of what I see and hear; that part belongs to the Society, and they do it very well. I merely go for amusement, and to see what inferences or conclusions I can draw from things exhibited, and from conversing with such gardeners and amateurs as I know and meet there, for the use of our own large and increasing family.

From the garden of the Society we had a fine large plant of the blue *Eranthemum pulchellum*, ditto of *Manettia bicolor*, *Cypripedium insigne*, with ten large flowers; *Cymbidium giganteum*, with two spikes bearing nine flowers each; a nice *Barkeria Skinneri* with three spikes densely clothed with crimson flowers; a *Vriesia speciosa*, but called *Tillandsia vittata* (Which is the first published name?); a large Pine-apple-like plant called *Bilbergia Morehana*, with grey, scurfy, arched leaves, and the usual bright scarlet bracts to the flowers; a large flowering variety of *Zygopetalum Mackayi*, with five spikes coming in succession; a *Begonia fuchsoides* in good bloom, with others; and a cross *Begonia* between *parviflora* and *insigne*—a true cross, the growth and habit after *insigne*, and the flowers after *parviflora*, but no improvement. The Society furnished, also, a nice collection of *Pompones Chrysanthemums*.

Mr. Jackson, of Kingston, came out strong with a fine collection of well-grown Orchids in bloom. There were twelve plants of *Barkeria Skinneri* and *Skinneri major*, supported, in one pot, on a branched block—the plants suspended from the branches after the English fashion of a Christmas tree. This kind of *Barkeria* is the easiest to grow of the family, and is a free flowerer; the *major* variety has the flowers of a darker crimson than the species. I expected to see among them the beautiful *Barkeria elegans*, one of the scarcest in the country, which I saw ten days before nearly in flower; two new strong spikes were then nearly open in front of a dense mass of old leafless stems. All these *Barkerias* require nothing but to be fastened up to bare chips of wood, and to be kept hung up quite close to the glass of the roof of a cool Orchid house, winter and summer, unless you want to hurry them on to finish their growth sooner in a hotter place. The least morsel of them flowers with Mr. Jackson on that plan; and I often go to see them. *Oncidium Barkeri* was in this collection; it is not grown half so much as it ought to be, seeing that it is one of the very best of the family, and is as sweet as a violet, and never fails to flower in a cool house early in the winter, and lasts a long time even in the drawing-room. The bulb and growth is like *sphaeralatum*, and quite as vigorous; the flower-spike is nearly two feet long, almost upright, and in this plant had twenty flowers, sixteen of which were open. The size

of the flower is that of *O. ampliatum major*, the colour of the lip the same as in *ampliatum*, but the form different, and more rounded; the back parts are brown, and barred across with yellow, zebra fashion. It was called after the late Mr. Barker, of Birmingham, and is a very rare plant yet. *Odontoglossum Inseleyi*, not so good as *O. grande*, being a much darker flower in that way. Inseley was gardener to Mr. Barker, and it was often my good luck to call on them, and hear each of them speak so well and so feelingly of each other, and it seems to do one good to write about their namesakes. *Cymbidium giganteum* on a par with that from the Society's garden, but with a yellow ground colour in the lip—an excellent early winter plant. Three kinds of *Calanthe*—the two varieties of *Vestita*, both with large, white, sweet-scented flowers; one having a purple blotch in the lip, and the other a yellow blotch; the new rose-coloured one from Mr. Veitch, last spring, belong to this section, all of them being ground Orchids, and not air plants. The third, *Ourcilogoides*, is more curious than showy; a dense cluster of small yellowish flowers, on the top of a short stalk, after the manner of *Tritoma*, and a beautiful new kind of *Anæctochilus* called *albo-marginatus*, a sight of which would be a good luncheon to Mr. Appleby; it is very near to *setaceus*, but rounder in the leaf, which is of a darker and better purple, and a small silver edge to the leaf all round, besides the vein marks. I was promised a paper on the cultivation of these beauties, from the young men who attend to them at Mr. Jackson's; a collection of twelve kinds, better grown than I ever saw them in any other nursery. The queen of all the variegated plants has been in flower these six weeks past with Mr. Jackson, who sent cut branches of it to this meeting, to show that the flowers are no better than those of the Grape vine, and much like them—this is the *Cissus discolor*.

Messrs. Standish and Noble sent a fine new hardy *Gentian* from the north of China, a plant not unlike a stiff *Pentstemon gentianoides*, with large flowers in pairs at the joints, which, in the bud, you might take for some large *Campanula*, but the inside is as blue as indigo. This will probably be an early spring-flowering plant, for this was one said to have been forced.

CHRYSANTHEMUMS.—There were some old ones shown, which made the very hair of my head stand on end; in the whole course of my experience I never did see such frights before. Imagine a four-foot-high plant in a large pot, with as many white sticks as could be stuck into the mould, and to these the branches were tied so as to keep the flowers as far apart as between here and London. But there was an old kind, from Mr. Spary, of Brighton, so managed as to be a triumph of skill; this kind, in the usual way, would reach four feet high, but as we saw it, the highest flower was scarcely ten inches above the rim of the pot, the plant being trained on the coiling system, and most of the flowers coming from side-shoots, it was a circle of thirty inches, or nearly a yard through, and as regular as a fancy Geranium, in wood, leaf, and flower.

Mr. Robinson, the great Geranium prize-getter, of Thames Bank, had two collections of *Pompones*, just as dwarf, compact, and full of bloom as any of his *Pelargoniums* ever were; he took the shine off from all the growers I ever saw. Mr. Chandler, and Mr. Henderson, of the Wellington Road Nursery, and others, had quantities of *Pompones* there, making our room quite spicy. The names of the best, and the other best sorts that I can get, I shall give altogether early in the spring; and then I shall put people in mind to begin them earlier than they would the old kinds, with some other improvements that I have heard of, but which I have not yet been able to see myself. D. BEATON.

FRANCISCEA.

THIS genus has already received attention in these pages. These notes are penned chiefly to suit the inquiries of those who would gladly patronize such sweet-flowering plants, and yet are destitute of the convenience of a regular plant-stove, though able, at certain seasons, by means of pits and other houses, to obtain a higher temperature than generally is necessary in the greenhouse. Being natives of Rio Janeiro, and of elevated, somewhat shaded positions in Brazil, they, on the whole, enjoy the temperature of an intermediate house. All when growing and coming into bloom would require a temperature of from 55° to 60°; when in bloom in early spring, a lower temperature would do; while some, when at rest, would enjoy a temperature of 45°, and others would be miserable if much below 50° at the coldest. The whole genus is looked upon by the ablest botanists as belonging to the family of *Brunfelsia*, but *Franciscea* is the title by which they are now commonly known. I shall now mention a few of the most interesting, with a few running notes upon each, as respects the different treatment they require.

FRANCISCEA ACUMINATA.

This naturally blooms about Midsummer, on wood of that season's growth. The habit is good, and the leaves neat and pointed, like a Willow. When in bloom, it will rejoice in a greenhouse not over airy. When the bloom is over, the consolidating of the shoots, by exposure to sun, becomes an object. In winter, it should descend little in temperature below 48°; it would be better in spirits at 53°. One thing very much against it is that its purple flowers have no sweet scent; and though the foliage is interesting, it bears no comparison with that of *hydrangæformis* or *macrophylla*; though in these last I never saw much beside the foliage to admire.

FRANCISCEA CONFERTIFLORA.

This is a beautiful species, producing its clusters, or trusses, of deep lilac flowers, from March to May, at the points of the shoots. The strength and ripeness of these shoots will, therefore, yield a corresponding number of flowers. This must be kept in view, in pruning and growing, after the flowering is over. A thicket of shoots would be so weak that the trusses of bloom would be small. Were they in a largish pot confined to a dozen, well trained out, many fine trusses might be expected. Coming into bloom rather early, this species should not be below 50° after Christmas, but be gradually raised 15° more by the middle of March. It would stand a few degrees lower, after having a good growth in summer. The temperature all along named is artificial heat, without making allowance for sunshine. Of course, without a plant-stove, but with a heated pit or frame, shortly after the new year the plant could receive its accession of temperature then; and after being comparatively dormant, there is nothing the whole family like so much as the sweet heat that arises from decomposing dung and leaves. Boast of all our improvements in heating as we may, there are no possible modifications of hot-water, that for some purposes will equal the good old-fashioned hotheds. Of course, it is better to have both than one alone, where conveniences will suit. Many, who, in their eagerness for hot-water pipes, as good as told old stable-muck to "go hang," may now pine and whine, and call and whistle in vain, when they want his help for a Cauliflower break.

FRANCISCEA EXIMIA.

This I have not yet had the pleasure of growing, though it is a beautiful thing to look at, with its large

flowers of bluish-purple-and-white, blooming freely on the young wood from New-year to Midsummer. I suspect, therefore, it will not be very suitable for our purpose, unless we can contrive to make it rest in winter instead of autumn. To bloom in January and February, and even in March, it would require a temperature of from 55° to 60° during the last half of the winter, at least. Our friend, Mr. Appleby, has bloomed it well, and he may, ere long, be able to tell us whether it will stand the starving system in winter. Plants that will do this, if not brought within reach of the millions, are placed within the means of thousands that could not aspire to a plant-stove. The maintaining a temperature from 50° to 60° at night, during winter, cannot for a moment be entertained by numbers, who yet can manage to get that heat for different purposes by March; and when thus rather tender plants are brought into bloom, they find that with a little scheming, that bloom is as beautiful and longer kept in a greenhouse than in a warmer place. I have not a doubt but that the present species would thrive in a greenhouse after the middle of April.

FRANCISCEA LATIFOLIA.

This older species is certainly not so fine as the last, but it is still beautiful. It has generally bloomed with us very profusely in spring and summer, while it has received about as much ceremony and care in winter as an old Fuschia. A large plant would render a small house rather disagreeable from its sweetness; but then one or two smaller ones would obviate that disadvantage, and, besides, be much easier managed as respects head room. Small plants will bloom freely on the short spurs produced on the well-ripened wood of the previous season. With such a starving resting in winter, the plant becomes nearly, or completely, deciduous, looking like a leafless lilac. In such circumstances, little or no water is given, and the plant is kept from frost in a cold pit, or beneath the stage in a greenhouse, or vinery, where the temperature will range from 43° to 46°. When convenient, or desirable, it is placed anywhere in a top temperature, between 50° and 60°, and by sprinkling with tepid water the buds soon swell, burst, and yield their flowers, when a lower temperature will suit them. I have kept them in the greenhouse until the advanced heat of the summer was sufficient for this purpose; but, of course, the plant did not bloom until Midsummer. After blooming, a cold pit, which you can make a hot one by keeping it closish after June, is just the place for it. A moist atmosphere can be easily communicated by frequent syringings, and as you perceive that the wood is long enough by the beginning or middle of autumn, more air may be given, until the plants are used to stand the full force of the sun so as to consolidate the wood. By the end of autumn, the glasses must be kept pretty close, and soon after the plants are placed in their cold winter quarters, the *resting*, and *yellowing*, and *shedding* of the leaves, will proceed contemporaneously. I cannot be sure of the individual now, but I have a vivid recollection of being told by a gentleman, when looking on a nice plant, that he had seen the identical thing in a sort of amphitheatre of bushy, low ground, bounded by the sea on one side, and the hills and forests to the north of Rio Janeiro on the other. He also told me, that of course the plant there was a thorough evergreen. Now, though nothing certain can be predicted from such a fact as the hardness of *latifolia*, still, reasoning from analogy, we should be apt to come to the conclusion, that possibly such kinds as *confertiflora* and *eximia*, found in much the same parallel of latitude, but from more elevated localities, and at such a distance from the coast as the province or government of St. Paul, would be capable of enduring a low temperature in

winter. A desire for experiment—a love for certain plants, and the want of sufficient convenience for pruning them, were the causes that demonstrated to me that some tropical, and bordering on the tropic, plants, that could be bloomed, and have their wood consolidated in our greenhouses in summer, might be kept in almost a torpid state in winter; and, just as in the case of the plant under consideration, be rendered fresher and more beautiful than if it had stood in a regular plant-stove house all the season.

FRANCISCEA ANGUSTA.

This species has small, narrow leaves, and blooms chiefly at the points of the shoots, and when in a small, young state; but it is by no means equal to the last, nor yet to

FRANCISCEA UNIFLORA, or HOPEANA.

The colour of the flowers, like *latifolia*, are a bluish-purple, changing to white; but while in *latifolia* the flowers are as large as the *Vinca major*, those in *Hopeana* are no larger, generally, than *Vinca minor*. The great abundance with which they are produced, and the lengthened period through which they succeed each other, together with their sweet perfume, render this one of the most valuable of the genus. The bloom is chiefly produced on short spurs thrown out from the well-ripened shoots of last season. But as the plant gets older the young shoots get smaller and more crowded; and from these plants a perfect sheet of bloom is produced shortly after you place the plant in heat. Unless, therefore, for renewing the head of the plant, no severe pruning will be required after the plant is two or three years of age. Like *latifolia*, it enjoys a close, moist heat after blooming, and the removing any small exhausted pieces of wood; then air should be given more gradually, by degrees, until the plant is pretty freely exposed in the warmest part of autumn. Water then should be given just to keep the plant from flagging, and the plant kept rather dry all the winter. During the cold season, if thus treated, it will be perfectly safe at 45°. I have often had it lower without injury, but I should not like the soil to be wet then. In a sunny day, when it was not advisable to water at the roots, the stems had a syringe with tepid water. When placed in a heat from 50° to 65°, the buds would soon swell, and the flowers open. Plants from eighteen to twenty-four inches high might thus be easily managed in a forcing-frame or pit. I have had it in a greenhouse the whole season, but then it did not bloom until Midsummer. The assistance of a little extra heat in spring not only gives bloom earlier, but ensures the young wood being better ripened.

GENERAL MANAGEMENT: PROPAGATION.—Short, stubby shoots, just beginning to grow, and young shoots, two or three inches long, getting hard at the base, will both strike; the latter most quickly. They will require to be placed in sand, over sandy peat, in well-drained pots; to be covered with a bell-glass, and plunged in a bottom-heat of 80°. April and May will be found the best times. Pot off when struck, and give the plants the assistance of a hotbed the first summer.

SOIL AND TIME OF POTTING.—Equal portions of peat and loam for plants a year or two old; more peat for young cuttings; and more loam for well-established old plants. Young shoots should not stand for want of pot room. Old plants should be pruned when done flowering—cutting away old effete stumps, and shortening strong young shoots; and when these begin to shoot is the best time to pot, taking care to keep the plants close and warmish afterwards. In most cases, when the plants are several years old, the earth may be partly shaken from them, a few of the roots pruned away, and then the plant be transferred to a similar

sized pot, as otherwise they make roots so freely that very large pots would be required.

WATERING.—Little of this will be wanted in winter, but it will be wanted liberally in summer. Clear weak manure will be of great service when the flower-buds are opening, and during the growing period afterwards. Whilst growing, the syringe should be applied every afternoon over the foliage: as resting time approaches this must be withheld.

R. FISH.

THE WOODS AND FORESTS.

(Continued from page 182.)

A LARGE, well-formed tree is one of the noblest objects the earth produces. I have often been struck with awe on viewing a noble Oak, or grand Beech, and admired the Power by which, from an acorn or a nut, such an immense mass of vegetable matter, strongly built, and firmly knit together, had been formed. These majestic denizens of the soil that are of the first size, have seldom, if ever, been planted by man. The Creator first commanded the original species into existence, and from these the self-sown large trees of the primæval forests have originated, such, for instance, as the *Porter Oaks* on the estate at Welbeck, belonging to the Duke of Portland, a remnant of the famous forest of Sherwood. I have seen these Oaks, and could not encircle one of them by clasp my arms close to the tree at less than six times, consequently, the circumference must be at least thirty-six feet, or nearly twelve feet diameter, and the height in proportion. A period of several hundred years must have passed since these trees were first sown, for it has been remarked, that "the Oak is three hundred years growing, three hundred years it stands in grand perfection, and it takes three hundred years to gradually decay and die."

Whoever, then, plants or sows an Oak, does it for the benefit of succeeding far-distant ages. Let not this consideration, however, hinder us from planting. The Oak, for one of the many species claiming the planter's attention, will, even in a man's life-time, afford a recompense for the pains bestowed upon it. The produce is—first stakes, then rails, then posts, then bark, and always fire-wood; besides its annually-shed leaves increases and enriches the soil around it.

We all naturally desire to see and enjoy, during our life-time, the fruits of our labour, and have some return for the outlay even in planting a wood. To do this most profitably, the manner of doing it is everything. The soil must be duly prepared by draining (if wet) and digging; then the kinds of trees suitable for soil and situation should be selected; and then an annual care in pruning, thinning, and protecting from vermin and cattle must be bestowed; and these preparations and annual cares must be constant and unremitting, in order to succeed perfectly. Who would not laugh at and pity the farmer who should sow his corn without ploughing his land, and then expect an annual crop without further care? Just as foolish is the planting of trees without due preparation, and afterwards leaving them to what men call, almost wickedly, Providence to take care of them.

I have said the land should be drained; but then that is expensive. Farming land, whether under grass or tillage, requires the drains to be covered where practicable, but forest land need not be so: the instance I gave in my last paper is a proof. Deep ditches, with a proper outlet for the water, will be sufficient. I have, in my mind's eye, a large tract of moorland in Derbyshire that might be drained so at a comparatively slight expense. At present, it produces nothing but whins and heath, and grouse, and a few long-legged, small sheep; and there are thousands of

acres, even in this thickly-populated country, in the same condition. Such tracts of land, at present, are not fit for any other purpose than planting. If that was properly done, the annual deposit of the leaves would, in time, cover the small rocks or stones, and thus, in some future era, when the land was disforested, a sufficient depth of rich vegetable mould would be deposited, on which might be cultivated vegetables for food to man and beast.

The planting, then, of a piece of ground, whether one acre or ten thousand, having been determined upon, the first consideration will be, Does it require draining in any part, or the whole? This will include the outlet for the collected water, and the mode of conveying it to that outlet. In fact, to drain land properly, requires a knowledge of levels, strata, deposits, &c., and the laws that regulate them; hence, a practical man, as foreman or director, ought to be employed. If the waste has plenty of loose stones on its surface, these might be got rid of usefully by making the drains with them. This operation of draining might be done in the long days of summer, or if labourers are then better employed in cultivated land, it might be done in winter when work is scarce. The proprietor should insist upon its being well and effectually performed, even if less breadth be done during one season. The produce of one acre, properly drained, will be worth more in a given time than three acres ineffectually drained. Whatever quantity is drained, then, let it be thoroughly done, so that a sufficient depth of dry material, whether soil, bog, or even stones, for the roots of the trees to run in, and there find support for the future forest.

T. APPLEYBY.

(To be continued.)

THE NARCISSUS.

(Continued from page 205.)

Summer Management.—In the open air, as soon as the winter is fairly passed away, let the soil in the beds be forked over carefully, so as not to disturb the roots or injure the leaves. Should the weather prove dry, it will be advisable to give a good soaking of water; and should the dry weather continue, give a second. If the water used this time be diluted with liquid-manure, it will encourage the growth of the leaves, which all bulb-growers know is of importance, inasmuch as strong foliage gives fine bulbs for the following season. If needful, continue a due supply of water till the blooms are expanded.

Tying.—As soon as the flower-stems have advanced above the foliage prepare a sufficient quantity of sticks, painted a light green, to secure them to. The flowers of all the tall-growing varieties are heavy, and would be bent down to the ground, splashed with the soil, and spoiled if not supported. The single-flowered varieties, such as *Incomparabilis*, double Jonquil, &c., might be tied two or three to a stick; but the *Tazetta* and single Jonquil should have a separate stick to each head of bloom. The sticks should be long enough to allow them to have firm hold of the ground, and reach very nearly, but not quite, up to the flowers, when they have attained their full height. As the sticks should be placed before that takes place, it will require some judgment and foresight to leave them long enough to reach the proper height. They might be left so as to be rather longer than is needful, and when the stems have attained their full altitude then cut them down to the proper length. In tying them, at first sufficient space must be allowed for the swelling of the stem. As it will be necessary to tread upon the soil to thrust in the sticks and tie up the flower-stems, every time the foot is set upon the

led the spot or spots so trodden should be immediately obliterated by the small three-pronged fork.

Shelter.—In order to prolong the bloom, as well as to prevent its being injured by sun, wind, or heavy rain, the bed should be protected by an awning of some kind or other. I consider the best is a frame of hoops and long rods, covered with oiled canvass, so contrived that the canvass can be easily thrown off or rolled up in all cloudy fine weather. The flowers would then be seen to greater advantage. When the bloom is over this shelter should be removed, except the frame-work of hoops, &c., which might be left on to enable the amateur to replace the canvass when the foliage begins to decay. The shelter will then be useful to keep off the rains, and thus ripen the bulbs more perfectly.

Taking up and storing the Bulbs.—As soon as the leaves are quite brown then take up the bulbs, but be careful not to bruise them, and leave all the roots that may not be quite dead to them. Then lay them on a walk or boards in a situation not fully exposed to the sun for a week or two, till all the leaves and roots are shrivelled up and dead. When that is so, then trim them off carefully without wounding the bulbs, and store them away in clean boxes and drawers in a cool room till the planting season comes round again.

I have written all these minute particulars on the culture of these sweet-scented charming flowers, because they are worthy of all the trouble an amateur can bestow upon them, and because I am not aware that any writer has given, hitherto, full directions on the culture of the *Narcissus*. T. APPLEY.

THE IRIS.

It has often been a matter of surprise to me, in visiting gardens in various parts of Great Britain, to find this beautiful flower so little grown. The large, showy flower, the many hues of colours they display, the delicious fragrance of several species, and their easy culture, are all qualities which recommend them greatly to the lovers of flowers. Following on my Essays on Hardy Bulb Culture, I shall next devote a paper or two to the culture of the *Iris*, more especially the bulbous species.

The name *Iris* (the Rainbow) alludes to the beauty and diversity of the colours found in many species. A bed of the English and Spanish *Irises* is extremely effective when in bloom, showing off well at a distance, and bearing, equally well, close examination. Our neighbours, the Dutch, have greatly improved these varieties, and increased their number, as their annual catalogues show. I have about twenty-five varieties myself under cultivation, and when they are in bloom they are much admired. There is no flower that blooms so well, with so little care, as these bulbous *Irises*. And as the season for flowering is past the middle of summer, they are in bloom when the London season is over, and the families of our senators and gentry have left the dusty smoky city for the clear fine air of their country seats, thence the *Iris* may very properly and usefully be used as a bedding-out plant, and as they attain the height of about a foot to a foot-and-a-half, they should be planted in large masses, that is, they will serve to fill a large bed.

T. APPLEY.

(To be continued.)

RHUBARB.

ALTHOUGH this plant was known and cultivated in the gardens of the wealthy during the greater part of the last century, it was not until the beginning of the present one that its uses were duly appreciated. Even then it made way but very tardily, until the late talented

Mr. Loudon called attention to it, and pointed out its merits, some thirty years ago. It was then that our great market-gardeners, allured by its productive powers, began to cultivate it extensively, and have since continued to furnish it in such quantities as to meet the wants of the public taste. Now, though it is unnecessary here to enter into the history of the many varieties which have been, from time to time, presented to us, it will be proper to enquire into its origin, and the country from which it originally came; and, although botanists may differ as to the name of the parent species to the garden variety now in cultivation, it is needless to regard that, since the fact seems established that they originally existed in the same localities, and a slight enquiry where that was will enable us to judge how far we can copy the same in England.

Upon looking at the map of Eastern Europe and the adjoining continent, Asia, a large and noble river runs for a considerable way parallel with the boundary. This large stream, the "Volga," drains a tract of country equal to that of many important empires. It is on the banks of this river that the parents of our garden varieties of Rhubarb were first found, and still exist in their primitive vigour, fed, as they are, by the waters of an extensive district; for, be it remembered, the Rhubarb flourishes on the vallies rather than the hills which intersect this central region; the right bank of the Volga, and its tributaries on that side, forming an extensive plain, rich in herbage, which the deep, moist soil sustains against the scorching effects of summer sunshine, more especially such plants as the "Rheum," which root so deeply as to be able to withdraw moisture at a depth below that to which ordinary droughts penetrate. This moist, deep soil, being the native place of the Rhubarb, it is only fair to infer that its offspring, in a cultivated state, must have a liking for the same abundance of food and drink which its ancestors enjoyed on the confines of the Caspian Sea. How many districts at home present features similar to those given. True, we have no rivers like the Volga or Euxus, but many of our streams pass through vales equalling in fertility that which bounds the first named river. The tracts of level land lying contiguous to, and not unfrequently overflowed by, many of our rivers, present a comfortable home for this greedy consumer of good living. It is, therefore, to such places that we may justly look for the best Rhubarb being produced; and much that is good is to be found in such places.

In thus pointing out a deep soil on the margins of a river which might occasionally be overflowed, I do not by any means advocate its being planted where salt water has access, because, its origin being inland, and at a long distance from the ocean, as well as from its influence, it is not likely to benefit by being forced to inhabit a position as much at variance with its internal wants and requirements as planting it on dry rock-work would be. True, a plant so vigorous as it is will grow under most circumstances; but, then, mere growing or dragging out an existence is widely different from flourishing; and, as a plant intended to furnish a quantity of useful edible matter must necessarily be supplied with the means for doing so, it is important that the soil on which Rhubarb is planted be deep, and, as I have before observed, rather moist than dry—not soddened by stagnant water, like wet, undrained land, but open and porous, in which water, after being once admitted, passes through without difficulty. Such soils exist in our country by the margins of many of our rivers, as well as it does by the sides of those which run into the Caspian Sea, and other places in South-eastern Europe. However, as many gardens are at a distance from a running stream of any importance, some imitation of this diluvial soil must be made,

in order to accommodate the plant to the conditions most conducive to its well-being.

Most old gardens that have been under a good and liberal system of cultivation present a stratum of some twelve or fourteen inches of rich, fine soil, of the class which, in a practical phrase, is called "top spit;" below this, a depth of nearly as much more of tolerably good soil is also found, which, receiving trenching now and then, presents a mass of food for deep-rooted plants, or assists those which the heats of summer compel to send their roots downwards in search of more food than the "top spit" can afford; such soils, with a subsoil not too dry, are certainly the best substitute that can be made for the river-side flats, and on such the Rhubarb will grow and attain a degree of perfection in proportion to the richness of the material by which it is fed, for the Rhubarb is a greedy devourer of those rich and unctuous substances which comprise the essence of the dunghill; if, however, the soil be stiff and heavy, with only a shallow portion under tillage, and below that an impenetrable clay, some modification of it must be attempted before Rhubarb is planted; trenching, as recommended before, must be done, with this addition, that the top soil must be again retained at top, and with the bottom must be mixed some opening matter of a kind likely to retain its usefulness; broken stones, in considerable quantity, lime and mortar rubbish, sand, ashes, or any mixture of these, with such things as leaves, rotten tan, or dung, even matters which of themselves present but a poor notion of fertility, are of great service when mixed with something else differing widely from them; in that respect, even the waste rubbish of the carpenter's yard is not without its utility, for when mixed with a stubborn and adhesive clay it separates the component parts, and probably before it decays, the accession of the air it had been the means of inviting below may have worked a partial change in the clay, so as to ameliorate its condition very much. Now, this is equally applicable to many other things, as well as to Rhubarb, but it is essentially so to it, for without a good depth of soil for the roots to ramble in the stalks will be poor and stringy, and not produced in anything like the abundance that constitutes a good crop; however, supposing all that was necessary to be done had been done to render the soil good, it is now fit to receive the plants, before doing which, however, let us take a review of the kinds now offered to our use.

One of the oldest kinds is the small green-stalked, called the *Old Green*. This is but little grown now, except by those who retain it for its flavour, which is certainly superior to that of all the larger kinds; but it is too small to meet the wants of buyers, and its produce too meagre to furnish a remuneration to the growers, who receive so small a sum per dozen bundles. Another old kind, alike passing fast into oblivion, is the cut-leaved variety, called *The Turkey*. This kind, introduced with a view to produce the medicine which passes under that name, soon proved the inability of our climate to produce that article in anything like the strength required for the purposes intended. This kind was never much a favourite at table, its ill-associated name, perhaps, assisting in its unpopularity, if not also injuring its neighbours; it is but little seen now. After this, followed some hybrids of more or less merit, but these all bowed to the bulky and ponderous stalks of *The Giant*, which appeared some thirty years ago. This variety was an especial favourite at the time with amateurs and others, who prided themselves on the production of stalks of almost fabulous weight; but it was in time discovered that the actual weight of good usable Rhubarb stalks which it furnished was not greater than that of many other kinds of less pretensions, while its flavour was inferior to some; hence, it fell into disrepute, and other kinds, many of them, having only

a local name, were substituted, until the celebrated grower, Mr. Myatt, commenced improving the kinds, when we were supplied in his *Victoria* and *Linnean*, which are almost all that can be wished for. I might, however, add, that prior to his furnishing the last-named, a good early variety, without any other cognomen than the *Early Red*, found its way into many gardens, and by its prolific, as well as other qualities, speedily became a favourite, and it is quite as early as the *Linnean*. However, I do not despair of seeing earlier kinds produced yet than any we have, but those now regarded the best are good in other points as well; therefore, for the amateur's use, I would simply advise the *Victoria* and *Linnean*; and if he obtains small plants from a nursery, with only one crown, I would advise their being planted on the good ground mentioned above, at about four feet apart each way, and be sure not to cut the stalks too soon, and I have no doubt but the result will in the end be satisfactory. Offsets are not produced in such numbers as in many other plants, but the plant produces seed, and when that has been carefully attended to, and true to its kind, the produce is about as true as that of Cabbages, Brocoli, Celery, &c.; which means that now and then a spurious one might be expected, and probably an occasional improved variety will present itself. The seed ought to be sown on a hotbed, or where many "tender annuals" are sown, and as soon as the plants will bear handling, let them be planted out in some fine soil, suitable and good. A subsequent change may, perhaps, be necessary during the summer, but the autumn, or winter, is the best time to place them in their permanent quarters; and as few plots of ground of equal extent produce so much edible matter as that occupied by Rhubarb, let it be liberally dealt with at the outset.

J. ROBSON.

MANAGEMENT OF FORWARD EWES AND LAMBS.

(Continued from page 207.)

THE Lambs, whilst young, should have Hay, or Hay-chaff, twice a day, but after they arrive at the age of eight or nine weeks they should receive Hay three times per day—the first bait, as has been stated, the first thing in the morning; the second at noon; and the third about three o'clock in the afternoon. It will not answer much later in the day, for in the short days of winter, after the Lambs have drawn away to the Ewes, they will lie down for the night, and the portion of Hay not consumed will, in case of rain, be distasteful to them, and damaged for further use. The Lambs, however, seldom consume all the Hay, nor should they be required to do so, for it is better that they select the best portions of it, the remainder being removed and given to the Ewes. The Oil-cake and Peas should be given, as before observed, according to their wants, but taking care to use covered troughs, and the last bait in the afternoon should not be given later than three o'clock, otherwise a portion may be left in the troughs, which will be damaged in case of rain, with change of wind, during the night time, for although the troughs may be covered, yet in damp weather, or drifting rain, the cake will become damaged or unpalatable. Roots for the Lambs should be supplied at short intervals, taking care to have any refuse remaining in the troughs removed every morning; cleanliness in feeding Lambs being indispensable. The Ewes may receive their Oil-

cake in open troughs, as they generally eat it immediately they are fed—there is then no time for it to receive damage by rain, &c. ; but the troughs should be kept dry, and for this purpose they may be turned upside down during the time they are not in use between the hours of feeding.

In the management of this kind of stock, or, indeed, of any Sheep, it is advisable to have a catch coop in the field, for the purpose of driving the Sheep into when required to be examined, or drafted, either for treatment in disease, or for the market; and in order that the coop may be clean, and not contaminated by constant use, it should either be removed continually, or else kept supplied with litter, such as refuse straw, as cleanliness requires; after being used a given time the bedding will be converted into manure, and may be removed for that purpose. I now propose to make a few remarks upon the state in which it is best to give certain feeding materials. When Peas are given to the Lambs it is desirable that they should be cracked, not ground into meal, for in this state it is not only objectionable to the Lambs, but very wasteful, particularly in damp weather, as much of the finest portion becomes clotted and distasteful, and, consequently, useless for the purpose intended. It is, therefore, only necessary that the Peas should be broken, and this only up to the time of the Lambs being two months old, for after that period they will readily eat them whole; and this, in fact, is the only state in which they can be given without some amount of waste.

Good Hay may be given to Ewes and Lambs, either entire or cut into chaff. I prefer that fatting Sheep (and particularly Lambs) should receive their Hay in the ordinary state, for they will then have the opportunity to select the best, and leave a portion, and afterwards it may be removed, as before stated, and given to the Ewes or other stock; whereas, if the Hay is given in the state of chaff, the Lambs cannot so readily select the best and the clover-leaf part, nor can it be made so available for the removal of the residue to other stock.

I would here observe that the declared object of parties who advocate the chaff-feeding of stock is to mix it with cake or corn; and also, when given alone, it is intended to prevent waste, and induce the animals to eat the whole, without distinction or selection. I think the former mode of mixing with Oil-cake or corn is objectionable, for I find the stock are apt to rout the chaff out of the troughs in searching for the better and more palatable food; and the latter mode of giving chaff alone I consider without advantage; for if we take the loss of good Hay when given in the ordinary state at regular intervals, and in proper quantities, it will not amount to more than one-twentieth part, or one cwt. in a ton; and it must be remembered that chaff is not always given without some loss, particularly in windy weather, when it is often blown out of the troughs. I will, therefore, put the loss on chaff-feeding, at half a cwt. per ton, which will only leave an actual difference or loss against feeding in the ordinary state of 56lbs. to the ton, and the wasted portion must be considered of some

value to plough in as manure. I will, however, place the value of loss at 2s. per ton, which sum will not pay the cost of converting the Hay into chaff, with other extra charges. I am willing to admit that chaff made of inferior Hay is made more palatable for store Sheep, and that in some instances they may be induced to eat a larger portion of the Hay as chaff than they would if given entire. But for Lambs, or fatting Sheep, it can never answer a good purpose to offer them Hay in the form of chaff, which they would otherwise refuse as ordinary Hay.

The selection of feeding materials is a matter of the greatest importance; for instance, it is commonly considered that White Peas are the best for feeding Lambs, but my experience has taught me that the Grey or Maple varieties are much better than the White. I had an excellent opportunity of proving this a few years ago; being out of the Grey Peas, which I usually grew for feeding, I was induced to purchase some of the best White boiling Peas which I could get, being informed that they were the best sort for the purpose. About a week after I commenced feeding with them, my Lambs, which had heretofore given good satisfaction, were now complained of by the butcher; nor did they die well, and in good condition, during the whole time they were eating White Peas. But, after a while, I fed them with Maple Peas, when the Lambs soon regained their former good quality, and maintained it until the end of the season. These facts, coupled with the chance which I had of seeing the Lambs dead every week, was conclusive to my mind, and I have not since been induced to use White Peas for feeding Lambs, nor should I do so if I were enabled to obtain them at a greatly reduced price. It may be considered that the astringent property of the Grey and Maple Pea acts very favourably (particularly in connection with Oil-cake) in the feeding of Lambs, by conducing to the production of a good proportion of muscle or flesh, which is really desirable and essential in making up Lambs of the best quality. Beans are not good for feeding Lambs, as they contain the astringent property in excess of the Peas, and I have known, by their use in feeding, that the flesh has been made so hard as to render it unsaleable as Lamb.

There is also a vast difference in Oil-cake for feeding purposes. The home-made, and some of the Marseilles Cake, are very good for feeding Ewes and Sheep Stock in general; but the superior sorts of American Cake is certainly the best for feeding Lambs. This Cake, when good in quality, always makes a higher price than other sorts of Oil-cake; yet it is much cheaper for the feeding of Lambs, if we measure its value by results. In fact, I do not hesitate to say, that so far as cake and corn are concerned, that American Barrel Cake and Maple Peas are the perfection of Lamb-food.

In the growth of Grasses intended to produce Hay for feeding this kind of stock, it is desirable to select White Dutch Clover with Trefoil, and a small portion of Italian Rye Grass mixed for the Lambs, and Broad Clover, with Trefoil and Italian Rye Grass for the Ewes. The former, being intended as Hay for the Lambs, should

be cut very early indeed; it will then, if well-made, contain the greatest amount of nutrition; and this is especially necessary, because young Lambs cannot, under any circumstances, be expected to eat more than a limited quantity. It is, therefore, desirable that the Hay should be of the best quality; for not only will they be induced to eat the greatest bulk of the material, but, at the same time, the largest probable amount of nutrition will be conveyed into the system. The Hay best calculated for feeding the Ewes is, without doubt, the same as has been recommended for the Lambs; but it often happens that a sufficiency is not grown to feed both with the same sort during the whole season. It is usual to grow the Clovers alternately, therefore the supply of either sort is limited, and the Broad Clover and Rye Grass Hay is commonly resorted to for the feeding of Ewes.

In a former paper upon this subject, it has been recommended to feed the Ewes with half-a-pound of Oil-cake per day each; it was, however, omitted that they should receive half-a-pint of Beans, also, in addition, during the last month of their fattening; this will render the flesh more firm, and they will sell better in the market, inasmuch as the great objection to Ewes which have been fattened during the time they suckled their Lambs being that they are usually deficient in firmness and quality of meat.

I shall conclude this paper with an observation as to the great advantage of high-feeding for the Ewes, in which the Lamb is also found to participate, owing to the extra quality of the milk induced by feeding upon highly nutritious materials, verifying the old saying, "A fat Ewe makes a fat Lamb."

JOSEPH BLUNDELL.

THE UPRIGHT SERVANT.

By the Authoress of "My Flowers."

ARE any of my readers natives of Wales? If they are, they will be pleased with a sketch of one of their countrymen, of whom they need not be ashamed, and whose upright and downright character may be an example to servants, and, perhaps, a useful hint to masters, who always find it so difficult to discover the truth when disturbances take place among their households. It is not always the smooth-tongued, or the smooth-tempered, that are right; very often the rough and disagreeable are the really valuable. But as man cannot look into the heart, it is next to impossible for a master to know who is right and who is wrong, unless the characters are so well understood as to enable him to know who is *most likely* to speak the truth.

David Rees lived with a widowed mother and a young sister, in a little white cottage that opened upon a "bryn" or green, in a southern county of Wales. It was a beautiful situation, as all Welsh situations are; and in the distance, a picturesque bay, bounded by a rocky shore, sparkled in the sun. The little cottage stood close to a very little *tricklet* of water which crossed the edge of the bryn, and the great stones that supported the plank for foot passengers were all daubed with whitewash, a very common fancy in that neighbourhood. If a large stone peeped out of a bank, there was sure to be a splash of whitewash upon it, so Nanny Rees' cottage and appurtenances were in the usual fashion. Two or three gentlemen's residences surrounded the bryn, and in one of these David began to be a lad about the garden and stable. He was very steady, and when the groom went away he stepped peaceably into the place.

David had a warm Welsh heart, and a hot Welsh temper. He gave all his affections to the family he lived with, and would have done battle for any one of them; but he always looked surly and displeased, do what he would. He loved to ride behind his young mistresses, but he always seemed as if he hated to do it, there was a sort of scowl on his brow which he did not mean; his temper was hot, but his heart was in the right place (*humanly speaking*), and the event proved that his face, and not his feelings, was to blame.

After some years the family left Wales, and took David with them. He became the servant of his young master, and if any one had dared to say that that young gentleman and his beautiful grey mare were not the best of their kind in England, David would have attacked them on the spot. Times, however, changed, and poor David was obliged to seek another situation. For some years he suffered much. Circumstances took place in the family of his new master of a painful nature, and David had a great deal to do and struggle with; but he was upright and downright, and it pleased God to guide him on through all. Then he went back into Wales, married, and became coachman to a gentleman who lived in the very house where his first master lived, close to his native bryn. Here he had another trial to go through. The iniquity that was going on in the establishment David could not away with. He saw things, and knew things, that almost distracted his honest heart. He had nothing to do with them, but he burned to tell his master; and at last he did. He was believed, but his master's approval was all he gained by it, for he had no longer a moment's peace. Not only his own fellow-servants, but those of every neighbouring family, rose up against him. A party spirit set in among the servants, which ended in David's going away; he could not stand against their malice and resentment, he was baited to death. Go where he would, he was pointed at and shunned, till his very health gave way, and he quitted his master, who was truly grieved to part with him.

After this, Rees took a cottage, and became a market-gardener, in a moderate way; but it was uncertain work. He had a wife and child, and an aged mother to support, and no capital, so that wet seasons, and other losses, tried him very much. When sent for by his first master to take a coachman's place in a friend's establishment, he gladly undertook it, although his health was not so strong, or his limbs so active as of yore. Here another trial, and a very sharp one, came upon him. Perhaps there is no set of people more crooked in their different ways, and according to their opportunities, than household servants. Of course, there are many valuable exceptions in every one's experience, and it seems a hard thing to say; but judging from what we hear, rather than from what we see, we may conclude that there are few small bodies of persons congregated together, where so much evil exists. We know what the natural heart of man is, and in a gentleman's household there is so little possibility of watching what is going on, that it gives room for unbounded mischief, with scarcely any likelihood of discovery. The household of Rees' master was a very regular, and well-ordered one, apparently; little company kept, religious observances attended to, and every thing in its place; but he soon found it was a scene of actual depravity and wicked connivance. One of the servants had been brought up from a child in the family, and was loved and trusted almost like a daughter. She was the worst of all; and poor Rees became almost distracted at all he knew, and dared not make known. He gave broad hints, but they were disregarded. He had suffered for speaking out in a former case, and knew not what to do for the best here. Charges brought against a favourite supported by all the rest of the household was ruin to himself; so, between indignation at the goings on, fear of consequences, a hot Welsh temper, and, perhaps, want of better judgment, he gave offence to both parties, and received notice to leave. This circumstance gave him freedom of speech; but the servants, who could bring no other accusation against him, joined in declaring him *mad*, and so alarmed their master and mistress by their wicked devices, that all poor Rees' assertions were received soothingly, as those of a lunatic; and he was got rid of quickly and quietly—returning to his cottage almost broken-hearted with this second unhappy ending to his honest service. The wicked never prosper long. Everything

came to light in the appointed time, and poor Rees was cleared of lunacy and of false witness. The half of the wickedness going on he had not revealed, or even known; but his uprightness was made manifest. Poor fellow! when the news reached him it gladdened his heart, and those of his friends who knew him rejoiced still more. He entered another service in his native land; his new master was well acquainted with his sterling qualities, and our last accounts stated that he was happy and going on well.

The fifteen first verses of the 37th Psalm may well sustain and cheer all who are situated like David Rees. The wicked plotted against him, and sought to slay him, but their own hearts were pierced, and their own bone broken. The whole Psalm is an exquisite portion for a tried and suffering Christian. Nothing can more strongly point out the safety of "upright conversation," and the peril of the wicked, than David Rees' little history. I wish his example would lead many to do likewise. There is no need to be hot-tempered: coolness is always to be desired; but a strong, faithful, and patient "trust in the Lord," and a full "committing of our way to Him," will bring every right thing to pass. Every thing is in God's hands; nothing happens by accident; nothing needs our meddling. Prayer and patience is *our* work; "salvation," "strength in the time of trouble," "help and deliverance," is the Lord's part to do. The *how*, the *when*, and the *where* is His, and not ours to settle. If Rees had done right in a more *Scriptural* way, the consequences would, most probably, have been less painful to himself; but we must *learn* to do well—our judgments err—our hearts betray us, and we do not *pray* and *wait* as the Word of God bids us. Let us *all* remember this.

CONCRETE WALKS.

SEEING your notice on concrete walks, and having for some years used tar on our paths at Chelsea, with most satisfactory results, I am induced to explain our manner of doing so, in the hope that it may be useful to your correspondent, particularly as many gentlemen have adopted the plan with equal success. An old gravel path will only require to be swept clean; a new-made one to be well beaten and rolled. Choose a warm day (the warmer the better); let the tar be boiling hot; use the common, long-handled, iron-bound tar-brush, and iron kettle, holding about a gallon, for the purpose of taking only so much tar from the boiler at one time as can be used in about a quarter-of-an-hour, and paint over with a good coat. Let a lad follow with dry-sifted sand, throwing over enough to prevent the tar sticking to his feet, and then go over with the roller.

We find that two men tarring will employ a lad to follow with the sand, and another to attend the fire and supply the tar, as fast as used. It is now about six years since our walks were first done; they have had two coats since, the last one this summer, and will require nothing more for three or four years, and in all weathers they are clean and dry. Any one interested may see them at any time, at the Pheasantry, Beaufort Street, Chelsea, and obtain any further information. They may be used an hour after being down, and stand the wear and tear of horse and cart.—S. C. and C. N. BAKER, *Half-moon Passage, Gracechurch Street*.

P.S. Is there not some mistake in recommending square baskets for poultry instead of round ones? The same fowls that would be cramped and injured in a square, would travel in comfort in a round one of equal space.

[We are much obliged by this very useful communication. With regard to the information about the shape of baskets for the conveyance of fowls, we confess it is quite new to us. We thought that the only advantage of a circular-sided basket over a square one is, that the tail feathers are somewhat less liable to be broken. It is quite true that there is more room available to a bird in a circular than in a square basket *exactly* equal in surface, but we would rather have, for fowls, a basket two feet square than circular and two feet in diameter.—ED. C. G.]

GAPES AND ROUP.

DOUBTLESS the readers of THE COTTAGE GARDENER have been gratified by the opportunity which Dr. Anthony's delineation has afforded of inspecting the worm discovered in the windpipe of a chicken; inasmuch, as such a representation conveys to the mind a much more definite idea than any verbal description. Had Dr. Anthony had the propriety to have stopped here, he would have rendered an acceptable and courteous service.

I am deeply grieved, however, that respect for common honesty and truth, duty to myself, and, I may add, to the contributors to THE COTTAGE GARDENER, compel me to visit with exposure the misrepresentations heaped upon myself. I perform the painful task, I say, as a duty to your readers; for, were they to feel that their contributions were subjected to unredressed falsification, few, I imagine, would venture to continue them.

My own words and meaning have been transposed. What I have acknowledged, I have been made to deny; and even the "lie circumstantial" has been imputed. Thus, Dr. Anthony makes it appear, by transposition of words, that "I hesitate not to deny as an error," what? the assertions of the numerous contributors who say that they have met with worm in the windpipe of fowls! whereas, my words are distinctly and most unmistakeably addressed, and addressed only (and I now quote the passage) to "the statement of Mr. Tegetmeier, that the cause of Gapes is the presence of worms in the windpipe. This I hesitate not to declare is an error!" showing, as I afterwards do, that inflammation (or croup) is the common cause.

Further, Dr. Anthony labours in the assertion, that I deny that worms exist at all in the windpipe; when, in the succeeding paragraph, I write that "I do not deny that worms infest the windpipe of fowls." Nay, to "prevent all misconception," I write another letter, and state, at page 109, that "I do not doubt but that Mr. Tegetmeier has really dislodged them from the windpipe;" and add, also, that "these worms may be a cause, but, at best, but an exceptionable one of Gapes!" I will spare Dr. Anthony all comment or epithet; and the imputation and discredit he casts upon my statement, that I examined the windpipes of six fowls, when he writes, in *italic*, that I *say* I have done so, I can only pass over.

But casting aside, as wholly unworthy, all further consideration of such matters, permit me to state my unbiased opinion on the subject of dispute with Mr. Tegetmeier. From all that I have experienced, or learned, I am firmly persuaded, that the disease called Gapes is truly and essentially Tracheites, or inflammation of the lining membrane of the windpipe: but that an unusual accumulation of worms in the windpipe does also, in some cases, produce distress in breathing or death.

As to Roup, I have not had any diseased fowls sent to me as I had hoped; I will, therefore, take Mr. Tegetmeier's own case, and a truly admirable one it is: it proves, as far as example can prove, that the Roup is *not* contagious.

Mr. Tegetmeier tells us, that all his extensive yard of fowls became affected with Roup; and that of so virulent a character, that no less than forty of his best fowls died of it; that his neighbour's rather extensive collection of poultry were kept in immediate contiguity with his own; so close, indeed, that they were simply separated by an *open* paling; yet not one of these neighbour's fowls became affected with Roup!

As I can never hope to see the experiment again tried on so large a scale as this, and the type of the disease so bad (40 fowls having died), I bring it forward as the most striking and convincing example of the non-communicability, or non-contagious nature of Roup. The mere division of an *open* paling was as literally nothing: and I am gratified that I can close this letter with such a proof of the correctness of my first opinion, that Roup would be found not to be *really* contagious. R. HORNER.

POULTRY EXHIBITIONS.

THE week that commenced on the 4th instant witnessed no less than four Poultry Exhibitions, namely, those at Leeds, Bristol, the Surrey Zoological, and Shrewsbury, so

that, when we also remembered that the Doncaster Show was held in the previous week, and that the birds destined for Birmingham had to occupy their pens on the 10th, we were prepared to find many of the best specimens reserved for the latter more important contest.

At LEEDS, the poultry and cattle were shown in a large temporary building erected for that purpose; the arrangements for lighting it, however, were sadly deficient, and no fault, therefore, could have been found with the judges had the points of some competing pens been passed over, or defects remained undiscovered. The sun, indeed, shone brightly for a time, but even then sufficient light was wanting, and the usual murky atmosphere of a great manufacturing town should have induced every exertion to avoid this most serious drawback.

The adult *Spanish* were a fair class, Mr. Hill Smith taking the first prize; the chickens, however, were very deficient in all the required points. The reasons to which we have already referred will at once account for the absence of many birds that have distinguished this class on former occasions.

Among the *Coloured Dorkings* were several pens of great merit, and the winners were deserving of very high commendation, not merely for form and weight, but likewise for their admirable condition in respect of feather. The chickens in pen 103, belonging to Captain Hornby, R.N., fulfilled all that could be required of them. The *White Dorkings* are, probably, out of favour in the Leeds district, since there were no entries in the old class, and the chickens were of very moderate pretensions.

When we come to speak of the senior *Cinnamon* and *Buff Shanghai*, or *Cochin-China* class, we need only refer to the fact, that the decision of the judges "*withheld both the first and second prizes*;" most fully, indeed, did we assent to this condemnatory sentence, for a worse lot were, probably, never penned. The chickens, however, were in advance of their elders, and a first prize was assigned to Mr. George Hustler, Appleton, Tadcaster, and the pullets in this instance would have done justice to a better cock. To Mr. Hustler there was also awarded a first prize for a dark Partridge-feathered pen of old birds. These were remarkably good specimens of their race, and, as but rarely happens, were properly matched, a handsome, red-mottled cock being shown with them, and not, as is usually seen, a Cinnamon, or dark Buff male bird.

For "*Shanghaes, White, Black, or any other colour*," nothing can be said; they were very indifferent, both in figure and condition; for the first-named, indeed, an apology may readily be found in the latter particular, in the circumstances of their abode in or near these regions of unceasing smoke. The last division of these birds were in a class "*for a cock and pullet of any colour*." In addition to the first prize pen, very good cockerels were shown in pen 197, belonging to Mr. Henry Ambler, Watkinson Hall, Halifax, and a pen, 210, the property of Mr. J. H. Smith, Skelton, York.

The *Malay* class contained as many cross-bred birds as it was ever our fate to witness in this family; the winners, however, were pure, though small.

The entries in the *Game-fowl* classes were numerous, and contained many excellent specimens. Captain Hornby's pen of *Black-breasted red*, No. 237, were of first-rate quality; it is true, we should have preferred an entirely black tail for the cock, but the presence of white is erroneously supposed to indicate any impurity of blood. The majority of the old Knowsley stock, against whom no charge of a craven disposition can possibly be alleged, were thus marked. The second and third prizes were well merited; the birds in both were of the same character, and showed in the small birds as near approach to the "henry" variety, in the reduced proportion of their tail, and the colour of their hackle, so nearly allied to the ginger hens, their companions, so frequently exhibited with red-breasted cocks. The chickens, also, were a meritorious class.

Pen 256, contained very handsome *Brassy-winged* birds, and 261, a pen of *Duck-wings*, against which we could only urge the error of placing "*olive-legged*" hens with a "*light-legged*" cock. Mr. Heaton's blue Duns, No. 263, were specimens of great merit.

We now come to *Hamburghs*, which were numerous, and

of fair average merit; but in this district, where they have deservedly attained such great estimation, we should have looked for superior excellence. Mr. Pulleisee's chickens were at the head of the *Golden-pencilled*, and Mr. Goodman, of Leeds, exhibited some handsome *Golden-spangled* birds. In the *Silver* varieties, the best class was, unquestionably, that of the *spangled* chickens.

Polands were only of moderate pretensions, if we except the prize pens of Messrs. Horner and Ridgway, for the *Golden*, and Mr. Boothby, for the *Silver*.

Among the *Bantams*, which competed together, "black" had the pre-eminence. There were, also, some fair "white" specimens, but the "laced" were inferior.

Geese were very good, and the same award of praise should be given to the Ducks generally.

Turkeys were fair; while the "*extra class*," beyond a pen of "*Black-breasted Polish*," contained nothing deserving of comment.

We have already expressed our regret that proper measures were not taken to secure sufficient light in a building erected for this special purpose, and we would also remind those to whom the details of management were on this occasion entrusted, that in several particulars their arrangements were defective. The vessels for water, for instance, were insufficient for a proper supply, and being made of tin, with sharp edges, were also liable to cause injury to the birds; the pens, too, for the *Geese*, being only three feet in length, crowded their unfortunate inmates far too closely, especially when it is borne in mind, that four days of exhibition with gas-light, and, consequently, nearly six of confinement in their several cramped tenements, was to be undergone.

But we must also allude to another grave subject of complaint, and that is the fact of the Secretary's office being at some distance from the place of exhibition, so that when a person not a subscriber, desirous of purchasing, had occasion to see the officials, he had to leave the room, and on his return pay again for admission. The answer to this complaint was, "that the individual ought to become a subscriber." We think otherwise; and on behalf of the public's shillings and half-crowns, must at once say that such measures will ultimately benefit but little the finances of any Society that may take such means of adding to their receipts. The public, who pay their money at the doors, are as much entitled to access to the Secretary's office, who undertakes the sale of the birds, as subscribers have, and the attempt to make such an intending purchaser pay for his re-admission is contrary to good faith, and should, therefore, be publicly censured.

To subscribers, indeed, the privilege of gratuitous re-admission is properly limited, provided always that full access is given to non-subscribers to such offices, or persons, with whom they may find it necessary to transact any matters of business arising from their presence in the building, and provided for and sanctioned by the regulations of the Society itself. To pay a second time for the honour of an interview with the gentlemen in office will hardly be appreciated as worth the cost, even if a courteous and civil reception be there guaranteed.

But while speaking of payments for admission, we should mention that the four days to which this Exhibition has been protracted have two on which a half-crown is charged at the door. We doubt the good policy of so high a rate, and earnestly would we suggest to similar local Societies the extreme desirability of fixing a general low charge for entrance, not merely for the interest of the Association itself, but that the views of its promoters may be the more widely extended, and the more beneficially exerted.

The judges were Mr. Andrews, of Dorchester, Mr. Baily, of Mount-street, Grosvenor Square, and Mr. Trotter, of Hexham, and their decisions were unexceptionable.

THE ANNUAL WINTER POULTRY SHOW in connection with the Surrey Zoological Gardens was held on the 6th, 7th, and 8th of this month. The pens were arranged at the Horse and Carriage Repository, near the Elephant and Castle, the best room for the purpose, except Bingley Hall, with which we are acquainted. The attention paid to the birds was worthy of all commendation, and we regret that there were not more there.

Of Poultry, there were 585 pens, and of Pigeons 212. They would have been more numerous had not exhibitions at Shrewsbury and Leeds been held at the same time, and if others had not been nursing for the Birmingham Show in the next week. There were not many good *Shanghaes* in any of the classes. Mr. Fairlie took the first prize for old Buff birds, and Mr. H. English, of Kerdistone, Norfolk, was similarly rewarded for Buff chickens. In Whites, Mr. W. C. Reynolds had the first prize for old birds, and the Rev. Dr. Allen for chickens. Mr. T. Bridges, of Croydon, and Mr. J. F. Chater, were similarly successful for old and young Partridge-coloured. Capt. Snell had the first prize for the best cockerel and pullet. The Blacks were indifferent; so much so, that no first prize was given for old birds, and no second for chickens. Mr. W. P. Flight, of Winchester, took the first and only prize for the latter.

The *Spanish* were fairly represented. Mr. Fox and Mr. Botham took all the first prizes.

Dorkings were not so good as we have seen lately, yet the classes were quite of average quality. Mr. T. Dutton, Mr. R. Boys, and Mr. Squire, took the first prizes for coloured *Dorkings*, and Mrs. Mills, and Mr. C. Alloway, for White *Dorkings*. There is an effort making to cry up *Dorkings* as superior to all other varieties, but it will not succeed. We shall have to show the reasons for the attempt, and for its failure.

The *Polands* and *Hamburgs* of all classes were good; but the *Game* and *Malay* pens might have had better tenants. *Bantams* were generally good. The other classes were below an average.

The best feature of the Show were the *Pigeons*. We never saw such a very superior gathering of these birds. An excellent authority writes to us thus sententiously about them.

"The *Almonds* excellent; no bad ones. The *Pouters* undeniable. Sam. Butt, Esq., in such condition, as likewise Matthew Wicken, Esq., Regent's Park, London. *Toys* and *Foreign Pigeons*, and also C. Rawson, Esq.'s, birds all good. Adkins, Esq., birds require a very long rest to recover themselves. The *Almonds* and *Pouters* were taken out of their pens and examined, and measured very accurately, that no mistake should occur. I have heard, the pen 117, *Spanish Runts*, Blues, are two cocks, if so, Adkins, Esq., will have the prize with his Reds."

The judges of the Poultry were E. Hewitt, Esq., of Birmingham, and J. W. Nutt, Esq., of Stoke Newington. Of the Pigeons, R. Pyne, D. Wolstonholme, J. M. Eaton, and E. Hardy, Esqs.

THE BRIMMINGHAM POULTRY SHOW.—During the present year a large compartment has been added to the former spacious area of Bingley Hall, but the unprecedented number of entries amounting to no less than 2275 pens (1995 Poultry and 280 Pigeons), left no room unoccupied. Comparatively few of the birds that had been entered failed to make their appearance, and where this was the case the vacancy was given to dealer's pens of the same class, so that there was no confusion of the various breeds.

The new portion of the building contained the birds that stood first in the catalogue, *Spanish*, as usual, heading the list. In these, the first and second prizes in Class 1 were assigned to pens 4 and 7, both belonging to Captain Wyndham Hornby, R.N.; and between these and the occupants of the third prize, pen No. 37, belonging to Mr. Harrison, there appeared a wide interval in respect of the main characteristics of this race. Captain Hornby's fowls were not merely possessed of those qualities of shape and face which are here required, but were also shown in admirable condition, bearing witness to the judicious management that had brought them out in such form after the late most unfavourable season. When we consider the great advance that has been made of late in this class, the general favour with which it has been received at the hands of the public, and the zealous determination with which numerous competitors have entered the field, the success that has again attended the Knowsley stock commands our admiration, no less than our surprise, that a single individual should have so long retained his enviable distinction as a *Spanish* breeder.

In *Spanish* chickens, the like success attended the owner of the victors in the senior class; the cockerel shown in

the winning pen being, probably, the best bird of the year ever exhibited. Mrs. L. C. Stow, of Breden, near Tewkesbury, took a second prize; while the third fell to Mr. Eden, of Salford, by both of whom birds of great merit were exhibited. Mrs. Stow was also deservedly at the head of the list in the class for a cock and one pullet, but in this class, which contained some 40 pens, there were many specimens that would have been more wisely retained in their owners' yards than brought forward as competitors in such a contest. We except, of course, the prize and commended birds, several of which promise well. We certainly had thought that the points of a *Spanish* fowl had been by this time sufficiently understood to prevent the exhibition of decidedly red-faced fowls, and of such, also, as, with a partial white face, combined a large portion of the former objectionable colour. *Spanish* chickens, it is true, must have many allowances made for them, since in their first season they come before us in an immature state; the cockerels may then be pardoned for a slight blush on their countenances, which may, perhaps, be ultimately exchanged for the proper hue; but decidedly red augurs ill for the future with pullets. Again, much may be hoped for from a blueish-white face, but the subsequent metamorphosis from red to white is rarely, if ever, achieved. Comparatively few dark feathers appeared between the face and comb of the prize birds, a point to which we attach importance, though perfectly aware of the difficulty of its attainment, and the evils to which the laying too much stress on it might probably lead.

We must now pass on to *Dorkings*, where Captain Hornby's name again stood first in both the 4th and 5th classes. Pen 160, to which the first prize was awarded, contained a most magnificent black-breasted cock, with rich, dark brown hens, which in size, figure, and condition, left nothing to be desired; the second prize birds were but little inferior, although their relative position was fully justified. These were both single-combed, but the third prize was assigned to some highly meritorious rosy-combed birds, belonging to the Rev. John Hill, the Citadel, Hawkstone, Shropshire. The hens were extremely rich in colour and of great symmetry. Lady Chesterfield took a fourth prize; and some other pens received the honour of high commendation.

Both classes of *Dorking* chickens, No. 5, containing a cockerel and three pullets, and No. 6, a cock and one pullet, were pronounced by the judges to be "*meritorious*;" to No. 5, indeed, the word "*highly*" was added, and fully was this deserved, for better specimens of this breed had never hitherto been brought together. A similar observation as that passed on the *Spanish* here occurred to us, namely, the wonderful condition in which the winning pens were brought out, many of the birds appeared as close in feather as game fowls, a point, as indicative of strength and vigour of constitution, greatly to be desired in a family against which the charge of being delicate is almost the only one that can be fairly brought.

In *White Dorkings*, the Earl of Dartmouth was successful in the old class; but these birds, beautiful as they undoubtedly are, seem year by year to be sinking in popular estimation.

"Where is the first prize for the old *Shanghaes*?" was a question repeatedly asked on the first admission of the public; to which the reply, that it had been "*withheld* by the judges," was the only one that could be rendered. Disappointment and astonishment were naturally both called forth, but the verdict, however startling, was just.

It cannot be questioned but that out of the immense number of *Shanghae* pens, in the various classes, amounting in all to 520, there were fewer good birds than might have been selected from the smaller collection of December, 1852. If an inquiry be made as to the causes of this retrograde movement, one depreciating influence may be traced to the immense number of inferior birds that have been distributed through the medium of the now frequent sales by auction in the metropolis. In expressing such an opinion, we should explain that no allusion is here made to the mode adopted by many large and successful breeders of disposing of their surplus stock by a public sale, rather than by private negotiations; for such a course is not merely the wisest for the owner, but also most advantageous for the public buyer. But the periodical sale of miscellaneous stock, often of

worthless character and doubtful pedigrees, the refuse of yards, and the rejected of all who are conversant with the race, are thus repeatedly foisted and palmed off on those who are willing to believe in such announcements, without personal experience of the subjects on which their money is to be expended. There may, indeed, be other reasons, for stating which space is now wanting, that have contributed to this result, but not the least is that to which we have now alluded. Shanghaes we believe to be a highly valuable fowl for many purposes, but when they were unduly puffed for the purpose of speculation, and represented as combining in themselves the merits of all the other races, they were unfairly treated, and their just position improperly depreciated.

The first prize we have said was here withheld; the second and third were respectively assigned to Messrs. Peters, of Mosely, and Steggall, of Weymouth. Mr. Cattell had some large birds in pen 480, but the cock was all but unfeathered on the legs.

There were several good pens of Buff chickens; those of Lord Berwick, that took the first prize, Mr. Harrison's, and Mr. Fairlie's, presenting many features of high excellence. Mr. Punchard took a fourth prize, and had also a highly commended pen.

In class 11, for Brown and Partridge-coloured old birds, Mr. Punchard was victorious; Mr. Fairlie being second. We regret to notice, in many pens exhibited in this and the following class for chickens, that colour has been neglected, far too large a portion of buff being allowed to present itself to the injury of the rich pencilling of the proper plumage.

White Shanghaes had many pens presenting that most undesired feature of olive and green legs; but the prize pens, of which that belonging to Mr. Hewitt, of Eden Cottage, near Birmingham, came first, were free from this defect, and well-shaped, handsome birds.

The Black Shanghaes did not rise above the standard of last year; few only of the cocks being free from bronze or red markings.

The prize pens of *Malays*, in both classes, were decidedly good; and although we believe the merits of this race to be superseded, in a great measure, by those of the Shanghae, it gives us pleasure to witness the retention of so distinct a family of fowls, with such regard to the purity of their blood as was evidenced by the winning pens.

Upwards of 200 pens of *Game Fowls* presented one of the most striking features of this Great Exhibition; and certainly, taken as a class, they were second to no other. The Pile birds, in pen 1011, belonging to Mr. H. Feltham, of Tamworth, were amongst the most perfect specimens of their race. The feather of the cock was of really dazzling effect, the back and wing being rich brown-red, with hackle and saddle of the brightest chesnut. The Black-breasted reds, again, in pen 1084, belonging to Mr. Henry Lowe, of Comberford Lodge, near Tamworth, could hardly be surpassed, either as regards the strength and symmetry of their form, or the brilliancy of their colouring. The Blacks and Brassy-winged did not strike us as equal to the other classes; but the Greys and Duckwings call for our highest award of praise.

We must confess to a feeling of disappointment on reaching the *Pencilled Hamburgs*, both Gold and Silver, few pens being free from grave blemishes; hardly, for instance, should we have deemed it necessary to remind exhibitors that five toes are not a recommendation in these fowls.

The *Spangled Hamburgs*, however, in both varieties, redeemed the character of their family, and contained many pens of very high pretensions. Mr. Adkins, to whom the first prize was awarded, showed a really spangled cock, a fitting companion to hens of great beauty. But here let a word be said on a point suggested by this and some other pens. The dark Streaky-breasted cocks with red hackle, too often shown with spangled hens, are deservedly censured and objected to; but let us be careful for the retention of the beautiful characteristic Hamburg tail while we aim at a spangled male bird. The more perfect the birds in the spangle, the nearer the approach to the henny tail of the Sebright bantam in both the Gold and Silver Hamburgs, among the latter of which were numbered many pens of great excellence.

The 1st. prize *Black Polish* cock was one of the best crested birds we ever remember to have seen; and when we say the hens were of proportionate merit, the position of the pen on the prize list will be accounted for.

Both the *Golden* and *Silver Polands* were admirably represented; the first prize chickens of the latter having every feather of their very symmetrical top-knots perfectly laced.

In class 42, for the *Miscellaneous Fowls*, there were numerous entries, including several pens of *Brahma Pootras*, but a second prize only was awarded to them, and this fell to Mr. Fairlie, whose pea-combed cock was shown with single-combed hens. We must again repeat our firm conviction, that nothing has been as yet elicited to warrant the belief of these birds proving a distinct breed. All that we can learn shall be carefully recorded, but we greatly err if in any respect they will be found to surpass good Shanghae specimens. In crossing with large Dorking hens, a source to which many so-called *Brahma Pootras* may, with great probability, be assigned, a large fleshy bird will doubtless be produced, with good development of the breast for culinary purposes. But we will not now anticipate the revelations of another season in respect of these novelties, be our surmises favourable or adverse. The pair of *Brahma Pootras* shown by Mr. Baily, of Mount Street, were of great size; the cock, we were assured, had reached the enormous weight of 15½ lbs. Besides these, we have had *Polands*, *Bearded*, *Black*, *White*, *Dun* with white top-knots, *Chamois* or *Pale Buff*, *White* with dark-laced hackle and top-knots, but yet far removed from the desideratum of *White* with *Black* crests; there were also some *Mottled* birds of extremely good shape and pretty feather.

Plumigans were present, but unnoticed. *Andalusians* had first and second prizes. *Black Hamburgs*, here termed "*Moss Pheasants*," were also rewarded; and among the *Rumpless* was a *Black* cock, the best of his kind we ever saw. The *Frizzled*, belonging to Miss Vivian, of Singleton, near Swansea, were shown in admirable condition.

Gold and *Silver-laced Bantams* were meritorious; some of the many white good; but the black mustered very strongly, and deserved great praise, being reported by the Judges as "*the whole class excellent*." In the miscellaneous Bantam class there were curious specimens of "*frizzled*," "*mottled*," "*tufted*," "*booted*," and the "*game*."

Geese were both numerous and good—the first and second prizes being both given to Mrs. Hill for cross-bred birds of the Irish and Toulouse varieties; the weight of the first pen being 57lbs.

Better *Aylesbury Ducks* than those belonging to Lord John Scott we should conceive it difficult to produce. The *Rouen* were fair, as also the *East Indian*.

For *Turkeys*, Mr. Fairlie won second and third prizes in the senior, and 1st. and 3rd. in the junior class. The weight of Mr. Harrison's, who took the first old prize, were 55lbs.

Two hundred and eighty pens of *Pigeons* were exhibited, containing many good specimens, among the best of which were some *Carriers*, *Almond Tumblers*, *Fantails*, *Archangels*, and *Jacobins*. Some "*Porcelain*," and "*Scagliola*," *Pigeons* were among the most striking novelties in this class.

The arrangements for the show were admirably conducted; and we are glad to learn that it is in contemplation to present a testimonial to Mr. T. B. Wright, in acknowledgment of the continued exertions of that gentleman on behalf of this Society. The prize list concludes with the names of the following gentlemen, who officiated as the Poultry Judges on this occasion:—

The Rev. William Wriothesley Wingfield, Gulval Vicarage, Penzance; George James Andrews, Esq., Dorchester; Mr. John Baily, Mount Street, Grosvenor Square; the Rev. Robert Pulleine, the Rectory, Kirby Wiske, near Thirsk; William Symonds, Esq., Rodwell House, Weymouth; Mr. Thomas Challener, Burnt Leys, Whitwell, near Workop.

The attendance was great beyond all former precedent. The number of visitors, on the first day, paying 5s. each, exclusive of subscribers, amounted to nearly 2000; and on the second day there were more than 10,000 who paid 1s. each for admission. Down to the evening of that day about £1400 worth of poultry had been sold.

We must observe, that the important and arduous office of superintending the feeding of the birds was entrusted to

Mr. Hewitt; and we can assure the exhibitors that to him they are greatly indebted.

SPANISH. (141 pens.)

Class 1.—Cock and three Hens exceeding one-year-old.

4. First prize, Mrs. Windham Hornby, Knowsley Cottage, Prescott. 7. Second prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescott. 57. Third prize, John Harrison, jun., Esq., Snelston Hall, near Ashbourn.

Class 2.—Cock and three Pullets, chickens of 1853.

54. First prize, Capt. W. W. Hornby. 50. Second prize, Mrs. L. C. Stow, Bredon, near Tewkesbury. 92. Third prize, Mr. Peter Eden, Cross Lane, Salford, Manchester.

Class 3.—Cock and one Pullet, chickens of 1853.

106. First prize, Mrs. L. C. Stow, Bredon, near Tewkesbury. 122. Second prize, Master W. B. Mapplebeck, Highfield, Mosley-road, Birmingham. 140. Third prize, Mr. James Bell, Woodhouselees, Canonbie, Carlisle.

DORKING. Coloured. (274 pens.)

Class 4.—Cock and three Hens exceeding one-year-old.

160. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescott. 149. Second prize, Mrs. Windham Hornby, Knowsley Cottage, Prescott. 164. Third prize, the Rev. John Hill, The Citadel, Hawkstone, Shropshire. 146. Fourth prize, The Right Honourable the Countess of Chesterfield, Bretby Hall, near Burton-on-Trent.

Class 5.—Cock and three Pullets, chickens of 1853.

216. First prize, Mrs. Windham Hornby, Knowsley Cottage, Prescott. 235. Second prize, The Rev. Stephen Donne, Oswestry. 235. Third prize, The Rev. John Hill, The Citadel, Hawkstone, Shropshire. 257. Fourth prize, Mrs. Finch Noyes, The Cottage, Salisbury.

(The whole class highly meritorious.)

Class 6.—Cock and one Pullet, chickens of 1853.

369. First prize, Mr. James Drewry, Newton Mount, near Burton-on-Trent. 416. Second prize, Mr. Henry Smith, The Grove, Cropwell Butler, near Bingham, Nottinghamshire. 327. Third prize, Mrs. Windham Hornby, Knowsley Cottage, Prescott. 363. Fourth prize, Mr. James Drewry, Newton Mount, near Burton-on-Trent.

DORKING. White. (42 pens.)

Class 7.—Cock and three Hens exceeding one-year-old.

419. First prize, The Right Honourable the Earl of Dartmouth, Patshull, Staffordshire. 430. Second prize, Mr. William Sutton, Grove Cottage, Handsworth. 421. Third prize, Francis Edwards, Esq., Bulstrode Park, near Gerrard's Cross, Buckinghamshire.

Class 8.—Cock and three Pullets, chickens of 1853.

440. First prize, the Rev. Edward Elmhirst, Shawell Rectory, near Lutterworth. 439. Second prize, Mr. George Jennens, Moseley, near Birmingham. 434. Third prize, The Right Hon. the Earl of Dartmouth, Patshull, Staffordshire.

COCHIN-CHINA. Cinnamon and Buff. (241 Pens.)

Class 9.—Cock and three Hens exceeding one-year-old.

487. Second prize, Mr. George Charlton Peters, Moseley, near Birmingham. 489. Third prize, Mr. Frederick Charles Steggall, Weymouth, Dorsetshire.

(First prize withheld.)

Class 10.—Cock and three Pullets, chickens of 1853.

496. First prize, The Right Hon. Lord Bervick, Cronk Hill, near Shrewsbury. 644. Second prize, Mr. John Harrison, jun., Snelston Hall, near Ashbourne. 628. Third prize, John Fairlie, Esq., Cheveley Park, Newmarket, Cambridgeshire. 600. Fourth prize, Mr. Charles Punchard, Haverhill, Suffolk.

COCHIN-CHINA. Brown and Partridge-feathered. (59 pens.)

Class 11.—Cock and three Hens exceeding one-year-old.

698. First prize, Mr. Charles Punchard, Blunt's Hall, near Haverhill. 704. Second prize, John Fairlie, Esq., Cheveley Park, Newmarket, Cambridgeshire. 710. Third prize, Mr. Thomas Bridges, Croydon, Surrey.

Class 12.—Cock and three Pullets, chickens of 1853.

731. First prize, Mr. Thomas Smith, Stableford, near Bridgnorth. 748. Second prize, John Fairlie, Esq., Cheveley Park, Newmarket, Cambridgeshire. 750. Third prize, Mr. Thomas Lowe, Whateley, near Fazeley, Staffordshire. 747. Fourth prize, Mr. William Batty Mapplebeck, 6, Bull Ring, Birmingham.

COCHIN-CHINA. Cinnamon and Buff, or Brown. (117 pens.)

Class 13.—Cock and one Pullet, chickens of 1853.

812. First prize, Mr. Charles Punchard, Blunt's Hall, near Haverhill, Suffolk. 792. Second prize, William Cust Gwynne, Esq., M.D., Sandbach, Cheshire. 848. Third prize, Mr. Charles Punchard, Blunt's Hall, near Haverhill, Suffolk.

COCHIN-CHINA. White. (60 pens.)

Class 14.—Cock and three Hens exceeding one-year-old.

874. First prize, Mr. Edward Hewitt, Eden Cottage, Sparkbrook, near Birmingham. 875. Second prize, Mr. George C. Peters, Moseley, near Birmingham. 872. Third prize, Miss Holmes, 112, New Street, Birmingham.

Class 15.—Cock and three Pullets, chickens of 1853.

891. First prize, Mr. Herbert, Powick, Worcestershire. 885. Second prize, Miss Kate Graham, Yardley, near Birmingham. 910. Third prize, Mr. Edward William Haslewood, Bridgnorth.

COCHIN-CHINA. Black. (41 pens.)

Class 16.—Cock and three Hens exceeding one-year-old.

930. First prize, Mrs. Hosier Williams, Eaton Mascott, near Shrewsbury.

(Second prize withheld.)

Class 17.—Cock and three Pullets, chickens of 1853.

951. First prize, Mr. Valentine Walshman Blake, 6, Old Square, Birmingham. 958. Second prize, Mr. Henry Parker, Church Lane, Handsworth, near Birmingham.

MALAY. (27 pens.)

Class 18.—Cock and three Hens exceeding one-year-old.

980. First prize, Mr. T. S. Tunaley, Milfield House, near Tamworth. 984. Second prize, Mr. Gervase Oldham, Nether Whitacre, Warwickshire.

Class 19.—Cock and three Pullets, chickens of 1853.

998. First prize, Mr. Charles Ballance, 5, Mount Terrace, Taunton, Somersetshire. 993. Second prize, Mr. William Manfield, Dorchester.

GAME FOWL. (226 pens.)

Class 20.—White and Piles. Cock and three Hens exceeding one-year-old.

1011. First prize, Mr. Henry Felthouse, Tamworth. 1003. Second prize, Mr. Charles Barnes, Vauxhall, Birmingham. 1006. Third prize, Mr. Francis S. Bullock, Hawthorn House, Handsworth, Birmingham.

Class 21.—White and Piles. Cock and three Pullets, chickens of 1853.

1034. First prize, Mr. Henry Felthouse, Tamworth. 1019. Second prize, Mrs. Wilson, Redditch, Worcestershire. 1032. Third prize, Mr. Richard Dummeller, Shackerstone Field, near Atherstone.

Class 22.—Black-breasted and other Reds. Cock and three Hens exceeding one-year-old.

1084. First prize, Mr. Henry Lowe, Comberford Lodge, near Tamworth. 1073. Second prize, Mr. William Cox, Brailsford Hall, Derby. 1091. Third prize, Mr. James Thomas Wilson, Redditch, Worcestershire.

Class 23.—Black-breasted and other Reds. Cock and three Pullets, chickens of 1853.

1139. First prize, Mr. James Thomas Wilson, Redditch, Worcestershire. 1113. Second prize, Mr. Thomas Roscoe, Knowsley Cottage, Prescott. 1131. Third prize, Mr. David Joseph Arnold, Tamworth.

Class 24.—Blacks and Brassy-winged, except Greys. Cock and three Hens exceeding one-year-old.

1164. First prize, Isaac Avery, King's Norton, Worcestershire. 1173. Second prize, Mr. Charles Hopkins, Newton Regis, near Tamworth. 1167. Third prize, Mr. James Thomas Wilson, Redditch, Worcestershire.

Class 25.—Blacks and Brassy-winged, except Greys. Cock and three Pullets, chickens of 1853.

1186. First prize, Mr. William Dester, Seckington, near Tamworth. 1190. Second prize, Mr. Richard Field, Bragg's Farm, near Shirley-street, Warwickshire. 1187. Third prize, Mr. James Thomas Wilson, Redditch, Worcestershire.

Class 26.—Duckwings, and other Greys, and Blues. Cock and three Hens exceeding one-year-old.

1201. First prize, Mr. Robert Choyce, Bramcote Hall, near Tamworth. 1208. Second prize, Messrs. William and James H. Parkes, Wellington Place, Highgate, Birmingham. 1191. Third prize, Mr. William Smith, Kent House, Halifax.

Class 27.—Duckwings, and other Greys, and Blues. Cock and three Pullets, chickens of 1853.

1215. First prize, Mr. John Lowe, Bull Ring, Birmingham. 1223. Second prize, Mr. William Cherrington, Stockton, near Shifnal. 1220. Third prize, Isaac Avery, King's Norton, Worcestershire.

GOLDEN-PENCILLED HAMBURGH. (40 pens.)

Class 28.—Cock and three Hens exceeding one-year-old.

1234. First prize, Mr. John Lowe, 6, Bull Ring, Birmingham. 1235. Second prize, Mr. T. R. Pearson, Chilwell, near Nottingham. 1226. Third prize, Henry Thomas Mousley, Esq., Ashby, near Welford, Northamptonshire.

Class 29.—Cock and three Pullets, chickens of 1853.

1256. First prize, Mr. James Drewry, Newton Mount, near Burton-on-Trent. 1246. Second prize, Mr. William Tyler, Friday Bridge, Birmingham. 1252. Third prize, Mr. William Tyler, Friday Bridge, Birmingham. 1261. Fourth prize, Mr. John Lowe, 6, Bull Ring, Birmingham.

GOLDEN-SPANGLED HAMBURGH. (67 pens.)

Class 30.—Cock and three Hens exceeding one-year-old.

1275. First prize, Mr. George C. Adkins, Carpenter Road, Edgbaston, Birmingham. 1276. Second prize, Mr. Francis Adkins, Carpenter Road, Edgbaston, Birmingham. 1287. Third prize, Mr. Joseph Tuley, Keighley, Yorkshire.

Class 31.—Cock and three Pullets, chickens of 1853.

1300. First prize, Mr. E. Auckland, Doncaster. 1319. Second prize, Mr. John Hill, Selly Oak, near Birmingham. 1327. Third prize, Mr. Emanuel Throop, jun., Keighley, Yorkshire. 1291. Fourth prize, Mr. Henry Clapham, Aireworth House, near Keighley, Yorkshire.

SILVER-PENCILLED HAMBURGH. (94 pens.)

Class 32.—Cock and three Hens exceeding one-year-old.

1358. First prize, Mr. J. R. Pearson, Chilwell, Nottinghamshire. 1345. Second prize, Mr. Thomas M'Cann, Graham House, Malvern, Worcestershire. 1351. Third prize, Mr. George C. Adkins, Carpenter Road, Edgbaston, Birmingham.

Class 33.—Cock and three Pullets, chickens of 1853.

1400. First prize, Mr. Edward Archer, Malvern. 1366. Second prize, Miss Mary Anne Tuley, Keighley, Yorkshire. 1393. Third prize, Mr. Josiah B. Chune, Coalbrookdale, Shropshire. 1387. Fourth prize, Mr. Joseph Taverner, Hartshill, near Atherstone.

SILVER-SPANGLED HAMBURGH. (86 pens.)

Class 34.—Cock and three Hens, chickens of 1853.

1422. First prize, The Rev. F. W. Cartwright, Oakley, near Thame. 1445. Second prize, Mr. Thomas McCann, Graham House, Malvern. 1430. Third prize, Mr. Henry J. Davenport, Colmore Terrace, Summer Lane, Birmingham.

(The whole class highly meritorious.)

Class 35.—Cock and three Pullets, chickens of 1853.

1464. First prize, Mr. Joseph Jordan, Waterfall Cottage, Wheeler-street, Birmingham. 1452. Second prize, Miss Simmons, King's Heath, near Birmingham. 1446. Third prize, The Right Hon. Lady Calthorpe, Perry Hall, Staffordshire. 1468. Fourth prize, Mr. W. Beach, Monument Lane, Birmingham.

POLAND FOWL. Black, with White Crests. (29 pens.)

Class 36.—Cock and three Hens exceeding one-year-old.

1501. First prize, Mrs. Adkins, Carpenter Road, Edgbaston, Birmingham. 1505. Second prize, Mr. Edward Bird Guest, Ivy House, Broadwas, Worcestershire. 1504. Third prize, Mr. George Richmond Collis, Crescent, Birmingham.

Class 37.—Cock and three Pullets, chickens of 1853.

1513. First prize, Mr. Thomas Pantan Edwards, Railway Station, Lyndhurst, Hampshire. 1522. Second prize, Mr. Edward Bird Guest, Ivy House, Broadwas, Worcestershire. 1520. Third prize, Mr. Thomas Pantan Edwards, Railway Station, Lyndhurst, Hampshire.

POLAND FOWL. Golden. (25 pens.)

Class 38.—Cock and three Hens exceeding one-year-old.

1531. First prize, Robert H. Bush, Esq., Letfield House, Clifton, near Bristol. 1533. Second prize, Master Godfrey Horner, Charlotte-street, Hull. 1530. Third prize, W. G. Vivian, Esq., Singleton, Swansea.

Class 39.—Cock and three Pullets, chickens of 1853.

1544. First prize, James Winter, Brailsford, Derby. 1539. Second prize, Master John Edwards Mapplebeck, Moseley-road, Birmingham. 1542. Third prize, James Winter, Brailsford, Derby.

POLAND FOWL. Silver. (24 pens.)

Class 40.—Cock and three Hens exceeding one-year-old.

1555. First prize, J. H. Vivian, Esq., M.P., Singleton, Swansea. 1557. Second prize, Mr. George C. Adkins, Carpenter Road, Edgbaston, Birmingham. 1563. Third prize, Mr. Christopher Rawson, The Hurst, Walton-on-Thames.

Class 41.—Cock and three Pullets, chickens of 1853.

1567. First prize, William Cox, Esq., Brailsford Hall, Derby. 1572. Second prize, Mr. W. G. K. Breavington, Sutton, near Hounslow, Middlesex. 1576. Third prize, Mr. Cyrus Clark, Street, near Glastonbury.

Class 42.—ANY OTHER DISTINCT BREED. (111 pens.)

BEAMAH POOTRA.—1583. Second prize, John Fairlie, Esq., Cheveley Park, Newmarket, Cambridgeshire. (No first prize awarded.)

CUCKOO.—1598. First prize, Mr. George McKenzie Kettle, Dallicott House, near Bridgnorth. 1596. Second prize, Mr. George McKenzie Kettle.

POLAND.—1611. First prize, J. H. Vivian, Esq., M.P., Singleton, Swansea. (White.) 1610. Second prize, Mr. Thomas Dutton, Streatham Common, Surrey. (White.)

ANDALUSIAN.—1624. First prize, Colonel Clowes, Foxmore Court, Worcester. 1623. Second prize, Mr. John Taylor, jun., Cressy House, Shepherd's Bush, near London.

MOSS PHEASANT.—1631. First prize, Mr. John Brown. 1633. Second prize, Mr. Joseph Jordan, Waterfall Cottage, Wheeler-street, Birmingham.

ANCONA.—1637. Second prize, Mr. Edward Simons, Dale End, Birmingham. (No first prize awarded.)

RUMPLESS.—1642. First prize, Mr. William A. Beach, Shirley-street, near Birmingham. 1644. Second prize, Mr. William Manfield, Dorchester.

SLKY.—1649. First prize, Mr. Jonathan Harlow, Highfield House, Moseley, near Birmingham. 1650. Second prize, Mrs. Jonathan Harlow.

OTHER VARIETIES.—1663. First prize, Miss Vivian, Singleton, Swansea. (Frizzled, or Italian.) 1668. First prize, Mr. John Shackel, Blenheim House, Small Heath, Birmingham. (Ragoon.)

BANTAMS. Gold-laced. (33 pens.)

Class 43.—Cock and two Hens.

1634. First prize, Mr. George C. Adkins, Carpenter-road, Edgbaston, Birmingham. 1674. Second prize, Mrs. Hosier Williams, Eaton Mascott, near Shrewsbury. 1693. Third prize, Mr. Edward Hewitt, Eden Cottage, Sparkbrook, near Birmingham.

BANTAMS. Silver-laced. (14 pens.)

Class 44.—Cock and two Hens.

1706. First prize, Mrs. Adkins, Carpenter-road, Edgbaston, Birmingham. 1714. Second prize, Mr. Edward Hewitt, Eden Cottage, Sparkbrook, near Birmingham. 1704. Third prize, Mrs. Hosier Williams, Eaton Mascott, near Shrewsbury.

BANTAMS. White. (27 pens.)

Class 45.—Cock and two Hens.

1721. First prize, the Rev. John Hill, The Citadel, Hawkstone, Shrewsbury. 1736. Second prize, G. F. Hodson, Esq., Banwell, Somersetshire.

BANTAMS. Black. (26 pens.)

Class 46.—Cock and two Hens.

1767. First prize, Mr. Gilbert W. Moss, Liverpool. 1764. Second prize, Mr. Gilbert W. Moss.

(The whole class excellent.)

BANTAMS. Any other variety. (20 pens.)

Class 47.—Cock and two Hens.

1775. First prize, Mr. Charles Thorneloe, Lichfield. 1779. Second prize, Mr. Charles Edwards, Brislington, near Bristol. (Frizzled.)

(The whole class excellent.)

GEESSE. (31 pens.)

Class 48.—Gander and two Geese.

1818. First prize, Mrs. Hill, New House, Stretton Grandison, Herefordshire. 1819. Second prize, Mrs. Hill. 1790. Third prize, The Right Hon. Viscount Hill, Hawkstone, Shropshire.

(The whole class highly meritorious.)

DUCKS. White Aylesbury. (128 pens.)

Class 49.—Drake and three Ducks.

1834. First prize, The Right Hon. Lord John Scott, Cawston Lodge, Dunchurch, Warwickshire. 1865. Second ditto, Mr. W. K. Breavington, Sutton, near Hounslow. 1842. Third prize, Mr. John Weston, Aylesbury.

(The whole class good.)

Class 50.—Rouen. Drake and three Ducks.

1906. First prize, Mr. Henry Worrall, Knotty Ash House, near Liverpool. 1888. Second prize, His Grace the Duke of Sutherland, Trentham Hall, Staffordshire. 1902. Third prize, Mr. Henry Worrall.

Class 51.—Any other variety. Drake and three Ducks.

1926. First prize, Miss Clifton, Whittington, near Worcester. (Black East Indian, or Buenos Ayres.) 1927. Second prize, Miss Steele Perkins, Sutton Coldfield, near Birmingham. (Labrador, or Buenos Ayres.) 1936. Third prize, Mr. John Shackel, Blenheim House, Small Heath, near Birmingham. (Decoy or Call.)

Class 52.—Muscovy. Drake and two Ducks.

1944. First prize, Mr. Charles Sturge, Edgbaston, Birmingham.

TURKEYS. (37 pens.)

Class 53.—Turkey Cock and two Hens exceeding one-year-old.

1957. First prize, Mr. William Harrison, Bagworth Park, near Market Bosworth. 1959. Second prize, Miss Ellen Fairlie, Cheveley Park, Newmarket, Cambridgeshire. 1960. Third prize, Miss Ellen Fairlie.

Class 54.—Turkey Cock and two Hens, hatched in 1853.

1965. First prize, Miss Ellen Fairlie, Cheveley Park, Newmarket, Cambridgeshire. 1966. Second prize, Miss Ellen Fairlie. 1969. Third prize, The Hon. Viscount Hill, Hawkstone, Shropshire.

(The whole class meritorious.)

GUINEA FOWL. (14 pens.)

Class 55.—For the best pair.

1991. First prize, Henry Thomas Mousley, Esq., Ashby, near Welford, Northamptonshire. 1993. Second prize, Mr. William Copple, Portico Cottage, Eccleston, near Prescott, Lancashire.

Class 56.—PIGEONS. (280 pens.)

CARRIERS.—7. First prize, Messrs. W. Siddons and Sons, Aston, near Birmingham. 24. Second prize, Mr. Samuel Ridley, jun., Clayton, Sussex.

ALMOND TUMBLERS.—56. First prize, Mr. Thomas James Cottle, Pulteney Villa, Cheltenham. 44. Second prize, Howard Luckcock, Esq., Oak Hill, Edgbaston, Birmingham.

MOTTLED TUMBLERS.—80. First prize, Mr. Joshua Hopkins, 39, Dale End, Birmingham. 88. Second prize, Mr. Henry Parker, Church Lane, Handsworth, near Birmingham.

BALDS, OR BEARDS.—60. First prize, Mr. John Child, Sherbourne Road, Balsall Heath, near Birmingham. 62. Second prize, Mr. May Goddard, Hagley Road, Edgbaston, Birmingham.

OWLS.—95. First prize, Mr. William Henry Simpson, Islington, Birmingham. 97. Second prize, Mr. John Baily, jun., 113, Mount-street, Grosvenor Square, London.

NUNS.—124. First prize, Mr. Samuel Kirk, Cheapside, Belper, Derbyshire. 125. Second prize, Mr. Henry Price, Handsworth, near Birmingham.

TURBITS.—136. First prize, Mr. Henry Child, jun., Sherbourne Road, Balsall Heath, near Birmingham. 131. Second prize, Master John Edward Mapplebeck, Moseley Road, Birmingham.

ARCHANGEL.—145. First prize, Mrs. Vivian, Singleton, Swansea. 146. Second prize, Mrs. Hopkins, 39, Dale End, Birmingham.

JACOBIANS.—163. First prize, Mr. Joshua Hopkins, Dale End, Birmingham. 155. Second prize, Mr. George Lowe, Greet, Sparkbrook, near Birmingham.

FANTAILS.—181. First prize, Mrs. Simons, Speedwell Road, Birmingham. 197. Second ditto, Mr. Charles Thorneloe, Lichfield.

TRUMPETERS.—206. First prize, Mr. Josiah B. Chune, Coalbrookdale, Shropshire. 213. Second prize, Mr. Charles Toney, Waterloo Place, Bloomsbury.

POUTERS, OR CROPPERS.—232. First prize, Mr. Joshua Hopkins, 39, Dale End, Birmingham. 218. Second prize, Miss Fanny Hill Curtis, High-street, West Bromwich.

BARBS.—242. First prize, Mr. W. H. Goddard, Hagley Road, Edgbaston, Birmingham. 244. Second prize, The Hon. Rowland C. Hill, Hawkstone, Shropshire.

RUNTS.—247. First prize, Mrs. Simons, Speedwell Road, Birmingham. 249. Second prize, Mr. J. B. Winder, Birmingham.

DRAGONS.—265. First prize, Mr. Samuel Ridley, jun., Clayton, Sussex. 266. Second prize, Mr. Edward Barber, Monkspath.

ANY OTHER NEW OR DISTINCT VARIETY.—269. First prize, Mr. John Child, Sherbourne Road, Balsall Heath, Birmingham. (Porcelain.) 271. Second prize, Mr. George Lowe, Greet, Sparkbrook, near Birmingham. (Black Kite.) 274. Extra prize, Mrs. Vivian, Singleton, Swansea. (Hyacinth.) 272. Extra prize, Mr. Thomas James Cottle, Pulteney Villa, Cheltenham. (Scagliola.)

HARDY BORDER PLANTS.

(Continued from page 186.)

ACANTHUS MOLLIS, OR BEAR'S BREECH.

THIS species is more appropriately called "The Corinthian Plant," from its being supposed to have been the plant the flowers of which furnished the ancients with that style of architecture. It is called *Acanthus*, from *acanthos*, a spine, because, in some of the species, the leaves are very spiny or prickly round their irregularly-cut margins. This is a noble and most desirable plant, either as a margin plant in the plantations, or as a single bunch plant upon the lawn. It flourishes in any good garden soil, and is readily increased by root-division. After being once well-planted it might remain for any number of years, forming a very pleasing and interesting group, year after year, without any trouble. It dies quite down every winter.

Its roots are of a long, fleshy, branching character, spreading out wide, and this is often the cause of its loss. Spreading-rooted plants are apt to be destroyed, because the forgetful, or else the inexperienced, or careless, assistant makes too free with the spade round about them. By the bunch system of growing the spade never need be used here at all; for should the plant appear to intrude too far on either side it is readily cut away, or any portion of its crowns removed with a three-grained fork, when it puts up in the spring, which is much better than the spade to be used among most plants; and at the close of the season, of course all unsightly decayed leaves and flower-stalks should be removed as they die away, and its little bed made tidy, and a spadeful or two of nice soil, such as leaf-mould, or the like, from the frame-ground, or compost-yard, put neatly over its crowns, and the bed is then dressed for the whole year.

Its flower-stems rise to from one-and-a-half to three feet high, with a beautiful long spike of spiny calyxes, and large blossoms, so curious and handsome, that every visitor to the garden would be inquiring what plant it could be. All its leaves put up from the ground from a foot to eighteen inches long, and stalked; their margins are cut, or irregularly scalloped, and a little spiny. Its time of flowering is from July to September.

It was introduced to this country in the year 1548, from its native place, Italy.

When planted in the margins of shrubberies, and in such-like places, the spade should always be kept from near its roots, and that part where this plant is be rendered tidy with a little top-dressing. By so dealing with it, we have had this plant flower beautifully in the most gloomy corner, as well as in the most open, sunny situation, for the last twenty years, in the same spots, and how long before we cannot say.

ACANTHUS SPINOSUS and A. SPINOSISSIMUS.—These, too, are curious and interesting plants, which should be dealt with in the same way. Their leaves are very much more cut and spiny.

Of course, such plants as these are some years before they become noble specimens, after which, under the above treatment, it would be difficult to number their days in the same spots.

T. W.

THE CARRIER PIGEON.

WITH regard to the Carrier (formerly styled King of Pigeons); it is possible to make every tame pigeon a Carrier, to a certain extent, according to the sagacity of the different breeds. Beards have been known to do Dover to London. Almonds and Short-faced Tumblers, by practising them, would do miles; and if a message is neatly wound round the leg, and properly secured, and not fastened to their feet like kite's tail (which would frighten the bird and prevent its finding its home), it would carry the message to its home, and consequently would be a Carrier. As a proof of it, at the Derby, at Epsom, after the Derby is over, I am more pleased at the sight of the pigeons tossed to convey the news of the winning horse than seeing the race. On one occasion, a pigeon was thrown up from a carriage window, with a message and a long string tied to its feet, as I presume; it was with the utmost difficulty the bird could reach the Grand Stand, when a person at the corner of the stand put out his hand and caught the bird, whether by the string or not I cannot tell. From what I saw, the bird made a great effort to reach the stand to rest; now, if the gentleman who tossed the pigeon from the carriage window had instructed it to convey the message to the gentlemen of the Grand Stand, it was, to all intents and purposes, the most sagacious Carrier ever heard of. I think the more proper name for our sharp and sagacious flying birds would be to call them Homers or Homebirds, so great is their love for home.

Suppose a gentleman bought a pair of these sharp-flying birds, for their sagacity, of a poor chimney-sweeper, and afterwards took them fifty miles into the country, placed them in the most comfortable aviary that ever was built, kept them in for twelve months, pampered them with every kind of grain or seed, beautiful waters to drink and wash in; now, after being kept one year in this lofty and spacious aviary, with all these apparent comforts, after giving them their liberty, will they stop? Certainly not; they will again go home. It appears to me their motto is "There is no place like home," however homely. Although it may be they were fed upon barley, dirty water to drink, and roosted upon soot-bags, yet as soon as they obtain their liberty they mount the skies, and will not take rest till they reach their home; by what means is mysterious and unknown; you might as well try to stay a Wood Pigeon.

The Pigeons now made use of as Carriers or Messengers, are Antwerp birds, and by some are called Antwerp Carriers. These are the birds to do the utmost work as Messengers. A thorough-bred Antwerp is an ugly looking bird, while a half-bred looks pleasant. The Carrier, or Stout Bird, so called and admired by fanciers, is too valuable to risk in flying, for fear of being lost, particularly as some of the owners would not take twenty guineas for each bird. The special object the fanciers now have in keeping these valuable birds, arises from the great admiration of their beautiful properties, viz.: 1st., The Beak; 2nd., The Wattle; 3rd., The Head; 4th., The Eye; 5th., The length and thinness of neck, and length of body, which is shape or carriage.

Was it ever yet placed on the pens of the Carriers at the poultry shows what distance the birds had accomplished? This would open the door to lying, for the man who would lie the most would be awarded the prize, if tested by such a standard, besides being a queer point. If at a society of Carrier fanciers, and some extraordinary Carriers were shown, a gentleman, a visitor, was to ask the question—the utmost distance they had performed—the fanciers would know then he was no fancier.

It is a mistaken notion, although not laid down, that a good fancier overlooks feather in awarding a prize, although the standard judiciously laid down takes cognizance of five properties. Good feather has its influence, and the eye is gratified by witnessing Carriers of superior plumage. There are good and bad colours in the Carriers, viz., good blacks and bad blacks, good and bad coloured dun, good and bad coloured blue, and in all the colours, which is not lost sight of in good fanciers.

With regard to the wattle, or orbit of unnatural size, or bloated amplification, no good fancier ever attempted to get into their birds bad properties. A crowded wattle is bad. The standard laid down for the wattle is thus; it ought to

be broad across the beak, short from the head to the point of the bill, and tilting forwards from the head; if otherwise, it is said to be pegwattled, which is a very great fault. It is not in the quantity of wattle, but in the right form and style of the wattle.

We must, therefore, altogether lose sight of first-rate and valuable Carriers being made flying birds; Antwerp, Dragons, and other cross-bred sharp birds are used instead. Therefore, the time has arrived, that we must look upon Carriers, not as in former days, as birds of extraordinary flight, but as fancy pigeons altogether.

A young lady might be truly beautiful at twenty years of age; a vast number of engravings of her might be sold; she entertaining a bad opinion of men is determined to die a virgin; her life is spared afterwards for fifty years, and not altering her name, some persons seeing her at this great age, would exclaim, "call her truly beautiful, she is anything but that!" not making allowance for time; it is equally applicable to Carriers. It is one thing to see a Carrier in the prime of life, and quite another thing to see it when it is very old and in the last stage of its existence. I admit, then, the wattle does not look handsome, the Carrier being altogether out of condition.—JNO. MATTHEWS EATON, 7, *Islington Green*.

MISCELLANEOUS POULTRY MEMORANDA.

THE CONTAGION OF ROUP.—The following extracts from my Poultry Correspondence, bears so directly on this subject, that I feel no apology is requisite for their insertion.—"The first time that I had it (viz. roup) amongst my fowls was after the purchase of two Chittagong hens, which I soon found were roup."—J. H. B. *Cheve Magna, near Bristol*.

This gentleman informs me, that he never loses any Turkeys by roup, even when most prevalent in the district, which exemption he attributes to feeding them largely with onions during the first two months of their lives, and that some Polands, hatched with the Turkeys and fed with them, have been exempt, though running with others suffering from it.

"I just noticed the disorder, brought by a fowl purchased in London, and which fowl certainly impregnated all the others." "I brought a cock from a distant run, being partly persuaded that roup was not contagious; he was in brilliant condition when he came, in two days he was moping about, and on the third day showed a discharge from his nostrils, which has continued for three weeks."—E. A., *Malvern*.

"I bought some fowls at Birmingham, who introduced it to our neighbourhood, and it has already killed a large number."—J. R. T.

"I killed a pair of Hamburgs that brought it on my premises."—R. B. T.

"I have some hens very bad; the complaint attacks all new comers, and two or three have died very shortly after."—W. W.

"I think the following fact proves the disease to be contagious. Four pullets were sent to me, about four months old, in a perfectly healthy condition, they were placed with the other fowls, and three of them have taken the disease and suffered severely."—T. W. T.

As the contagious character of this disease is now under discussion, I have selected the above extracts, all of which have a reference to facts rather than to mere opinions; they are not, I am sure, more than a small portion of those that I might have gathered by wading through all my correspondence. I would strongly caution all breeders to be upon the safe side, and not to allow any expression of a new opinion, unsupported by any publication of facts, to tempt them to place an infected breed along with sound and healthy stock.

On looking over my last paper on this subject, I find that I omitted to mention several points of minor importance; firstly, as to the mode in which the disease is communicated. I imagine, that the fetid purulent discharge from the nostrils of affected birds running into the water, or mixing with soft food, is the usual mode of propagation; and, in other cases, it may spread from one fowl picking the intrusted discharge off the beak or feathers of another.

With regard to the susceptibility to contract the disease, I find that amongst my own stock the Dorkings were the most liable; next in order, the Spanish; and least of all, the Shanghaes, whose comparative immunity from this scourge I regard as a strong point in their favour.

I may also mention, that owing to some mistakes in the punctuation, there is much obscurity in one or two passages, thus, by the misplacing of a period, I am made to speak of sulphur and purgatives as tonics, and then to say they were employed as external applications.—W. B. TEGETMEIER.

FLOWER OF SULPHUR FOR VERMIN.—One of the most successful exhibitors of Shanghaes told me that he had acted on my advice respecting the use of this remedy, and that he purchased twenty-four pounds of it to fill a dusting hole, and that his flock of more than two-hundred birds are now as free from lice as they were infested formerly. On looking over the latest American Poultry Book (namely, MINER'S) which has been just imported, I was pleased to see the remedy has been adopted in America, and that it is found that it may be more conveniently applied by means of a flour dredger than by the hand.

MAGGOTS FOR FOWLS.—Many persons are in the habit of hanging up some animal substance, such as refuse meat, dead poultry, &c., for the purpose of furnishing a supply of maggots for fowls. The plan is objectionable, in many points, the offensive odour of the putrifying meat is unpleasant and unwholesome; nor can I regard the maggots falling uncleaned from the putrid flesh as particularly wholesome diet. By accident, I discovered a better mode of proceeding. It is customary with me to have the dead fowls which I am so frequently receiving buried in the fowl run; it frequently happens that they are fly-blown before burial; in that case, the maggots continue to live, and grow to their full size, when their natural instinct leads them to quit the carcase and work their way towards the surface of the ground before they change into the perfect insect, the well-known blue bottle or flesh fly. The living fowls soon discover their approach towards the surface, and, by constant scratching, obtain a plentiful supply, and if the decaying flesh is buried a couple of feet deep, there is no fear of their exposing it, nor does it even become offensive to the smell.

I regard this plan as far superior to hanging up flesh to putrify. In the first place, it is not offensive; secondly, the maggots, by working their way through eighteen inches of earth, are thoroughly cleansed from any adhering putridity; thirdly, the supply is gradual, and the scratching affords constant amusement and occupation for the poultry. It is hardly necessary to state, that if the meat is buried before it is fly blown no maggots will ever make their appearance. At the date of writing this memorandum (November 14) I have observed several fowls diligently scratching over the graves of some of their kindred interred a few weeks back, and on turning up the earth with a spade, I saw that there was a sufficient number of maggots to furnish them with amusement and animal food for some time. Although I think this by far the best mode of giving maggots; yet, even given in this way, I regard them as vastly inferior to the diet of worms.—W. B. TEGETMEIER.

TO CORRESPONDENTS.

FEEDING BEES (E. B. S.).—The hive, weighing about seventeen pounds, exclusive of hive and board, will not require feeding till the spring, and then with barley-sugar. The one weighing only five pounds requires liberal feeding now, certainly not during severe frost; the food most proper for them is syrup, one pound of loaf-sugar, quarter-of-a-pint of water, and a quarter-of-a-pound of honey, simmered together over a slow fire till the sugar is melted; when cold, given to the bees at the top of the hive. Let both hives remain where they now are.

MOIST HEAT (A. B. H.).—Greenhouse plants do not require this except when they are growing. It is useless to apply the liquid-mamure to any plant except when growing and healthy. Wait until the spring. *Pelargoniums* are what formerly were called *Geraniums*, but they are now divided and quite distinct genera. *Dorking (Coloured) Fowls* equally pure in race, are produced and exhibited with single as well as double combs. Under the greenhouse shelves will do very well for dormant *Fuchsias*.

NEGLECTED GARDEN (A. Madeley).—This, so infested with rank grass and other weeds, you had better have the top six inches pared off, and thoroughly charred. It will destroy the weeds, &c., and give you a good dressing for the soil.

BINDING THE "COTTAGE GARDENER" (J. Pennington).—If you state the number of your volumes, you may obtain Indexes and covers for them, through your bookseller, of Messrs. W. S. Orr and Co., our publishers.

CLIMBERS FOR BACK NORTH-EAST WALL OF A CONSERVATORY (Minn).—You wish them to be evergreen, and continue long in bloom, and the wall is heated in winter by a stack of chimneys. You have not told us what heat you can command on this wall, and the aspect is a bad one. Many of the plants you mention require a tropical climate, and others, such as *Cissus* of varieties, though they look well as evergreens, have no flowers to speak of. The only ones you mention suitable are—*Bignonia jacinthoides* and *Jasminum grandiflorum*; and if you have a *Habrothamnus*, have elegant, not fasciculatus. We would add *Jasminum gracile*, *Passiflora racemosa*, *P. caerulea*, *Mandevilla suarvroleis*, *Kennedy Marryatæ*, *Sollya heterophylla*, and *Tarsonia mollissima*. With such an aspect, were the place ours, we would plant these for quick covering; but we would ultimately have such a wall covered with *Camellias*, and then it would be a sight worth looking at.

SEEDS FROM SMYRNA (Rev. R. M. E.).—The name of the seed is, probably, a local name; and if the plant is a native of Smyrna, the way to treat the seeds is to sow them shallow, in a pot of light soil, early in March; to put the pot in a cucumber-bed, and to watch the seedlings, if they come up, to see the place is not too hot for them; to put them into single pots, and, by the end of May, to plant one-half of the plants out-of-doors, in some warm situation, to prove themselves, and to keep the rest in pots as greenhouse plants, to wait the result of the experiment. If the frost does not harm the plants put out, of course the whole are hardy; if it does, treat the others like greenhouse plants until they flower, and see how you like them; meantime, you may learn from the donor what the plant is considered best for at Smyrna.

WILLIAM ADAMS (C.).—The kind assistance already received has fully supplied all present wants. Should a more advanced stage of suffering need increased assistance application will gratefully be made through this medium. It is impossible fully to express the gratitude felt by all parties to the truly kind donor.

PINES NOT FRUITING (A Young Gardener—"Yorkshire").—You have watered your Pines too equally all the year; they have gone past their showing time, and are then rather puzzling. You must force them to show by a check, and that check drought at root, with a moderate bottom-heat until spring, say 70°. As soon as light weather comes in, the end of February, you may increase bottom-heat to 84°, and shut up much sun-heat, and resume watering. About your new pinery we cannot offer building details; you had better employ somebody on the spot who understands it. You must compel your man to guarantee an air-heat (if necessary) of 70°, when there is 20° of frost outside; and you must be able to secure bottom-heat at all times of 80°.

PEACHERY (J. Stephens).—Your peach-house is thirty feet long. You may put three trees in a front trellis, viz., at the warmest end a *Royal George*, next an *Etrage Nectarine*, then a *Bellegarde* Peach. On the back, we suppose standards, another *Bellegarde*, a *Walburton Admirable*, and a *Red Roman* or *Murray Nectarine*; the *Nectarine* at warm end, next *Bellegarde*, and lastly the *Walburton Admirable*. You can have the covers from Messrs. W. S. Orr and Co.

CONCRETE FOR YARDS (B. H.).—You will see, in a communication to-day from Messrs. Baker, that their tarred walks will bear a horse and cart, we think, therefore, that it would do for farm-yards and sheds. The experiment is well worth trying. We should use small gravel instead of sand.

BOOKS (T. E. C.).—The 7th edition (1830) of *Withering's Arrangement of British Plants*, and *Main's Forest Planter and Prover's Assistant*, would suit you. (*A Young Gardener*).—Loudon's *Hortus Britannicus* was stereotyped, therefore continues as it was at first. The *Supplement* can be had separately. We cannot tell when another supplement to the *Encyclopædia of Plants* is likely to appear.

HOLES IN AN ELM (E. N. H.).—Cut out all the dead parts, and fill them up with a mixture of equal parts clay and cow-dung, made into a paste with urine.

KILLING WIRE-WORMS.—C. F. writes as follows:—"Why Mr. T. Appleby should recommend your readers, in his paper on 'The Gladiolus,' published in last week's number, to take such a deal of trouble to provide themselves with 'a basin with a small portion of oil in the bottom,' and a kettle of 'boiling water,' in order to destroy the wire-worm, I cannot conceive. When I meet with one of these little pests he does not live a minute longer. With my finger and thumb of one hand on the head, and the corresponding digitals of the other hand on the tail part, his body, with a slight extension, readily divides into two parts; both of these I then drop into the border, and my work proceeds. Thus the body, which before threatened so much havoc among my pets, becomes, as far as it goes, food for them."

NEWLY-PLANTED PEARS AND APPLES (Iota).—These you say are dwarfs. Cut the strong shoots back to four buds, and the weaker to two. It will be time enough to talk about training them two years hence.

VINE AND FIG-TREES (I. E.).—Move them at once into the greenhouse. Not knowing their size, we can say nothing about the pruning needed. Keep your *Ferns* where they are until spring. You had much better keep the pots of *Ferns* within others a size or two larger, with the space between the two pots filled with damp moss.

SHANGHAI EGGS (B. W.).—We know that Mr. Sturgeon has always refused to sell eggs.

ROOT-PRUNING (Clericus).—Much has been written in former volumes; but, generally, applicable rules can scarcely be prepared. The whole operation requires to be guided by the strength of the tree, the kind, and the object desired.

VARIOUS (A Subscriber, D. H.).—If the *Vines* require manure, give them a little well-decayed stable dung. *Red Spider* is generally caused by deficiency of moisture. We gave, some months ago, a full account of Mr. Fleming's *Pine culture*. *Vines* inside a house would be benefited by bottom-heat to their roots, if these are outside the house.

BLACK SHANGHAI COCKEREL (W. W. B.).—In answer to your query, "Do you know of any real Black Shanghai Cockerel?" we can say, Yes; Mr. W. P. Flight, of Winchester, has one, but he is very young. We believe he will not sell him.

SLUGS (F. S. Tyro).—Continued stirring the ground, frequent sprinkling with lime and salt, but of the latter not more than half a ton per acre at a time, sedulously searching for them, and letting a few ducks roam over the garden occasionally, will keep down these pests; but there is no mode of utterly destroying them.

NAMES OF INSECTS (Rusticus).—The little beetles which riddle holes in the leaves of your Hollyhocks are the *Haltica rufipes*, a very common species, very fond of malvaceous plants, both wild and cultivated. If very troublesome, the plant should be well shaken over a pillow-case, or some such bag, and the insects which will fall in should be destroyed by dipping the bag into boiling water. The Entomological Society, 12, Bedford Row, London, will be happy to receive any specimens of British insects for distribution of duplicates among the members.—W. W.

ADDRESS (Tauntonensis).—Mr. Trotter, Healey Mill, Hexham.

POULTRY JUDGES (F. W. Freeman, Little Finborough, Stowmarket).—In answer to your queries—six hours is too short a space of time for two judges to examine accurately 750 pens of fowls; for if there are three birds in each pen, 2250 have to be examined in 360 minutes. Birds hatched in the autumn of 1852 are certainly not to be considered as chickens of 1853; but it is sometimes impossible for judges to distinguish between chickens hatched late in the autumn and others hatched early in the spring following. Trimmed spurs ought to disqualify birds as well as trimmed feathers, because, as you say, it enables cocks of eighteen months old to be passed off for cockerels of less than twelve months. According to present rules, a single-combed White Dorking cock is disqualified, and ought not to have a prize awarded.

ROUP (L. E. I.).—We should no more think of putting healthy fowls into a house and walk where roup has prevailed than we should of putting a healthy horse into a stall where a glandered horse had been living. Before we put any fowls into that house and walk we should have the house thoroughly cleansed and washed over with a solution of chloride of lime. We should also have the surface-soil of the walk pared off and burnt. The ashes might be again spread over the walk, and would improve it.

NORWICH POULTRY SHOW (J. Playford, Great Yarmouth).—We are quite sure that Mr. Catling would not lend himself to give prizes to exhibitors merely because they were residents in Norwich; nor do we think the Committee would wish anything so unfair to be perpetrated. It is quite impossible for us to give an opinion upon birds we have not seen.

BOTTOM-HEAT (M. L.).—By referring to the index you will find bottom-heat by pipes and tanks discussed. As you contemplate using manure in a fresh state for the purpose there will be no difficulty in the plan proposed—a brick pit, with open ends, to receive the manure beneath a slate bottom; but you must be sure that this slate is thoroughly close, to prevent the impure gases entering. You may divide your other pit with temporary moveable wooden partitions. It is no uncommon thing for us, of the same pit, to make one light a hotbed and the other a cold bed, and just by placing a little hot manure in one and not in the other; and when we want it all for cold pit plants whipping the manure out again. With your close bottom, you need not mind how rank your manure is. The slated place would be better than the other.

BOTTOM-HEAT IN A COOL GREENHOUSE (Ibid).—Do not attempt it; the flue would be too precarious to depend upon, and, besides, you do not want it. If you want to propagate greenhouse plants there and bedding plants, you can do it all comfortably without bottom-heat; only, in some cases, you might wait longer. We think you will know all about this, even by reading articles since No. 242; but if there is any trifling or particular you wish better cleared up, write again.

TEMPERATURE OF GREENHOUSE (Ibid).—Do not let it be below 35°; 40° would be better; and if you wished bloom 45° would be better still. These are night temperatures in cold weather; a slight exception might be made in extreme cases. Mr. Fish wrote on the most economical means for doing all these things some time ago. With an outside at 30°, he would require to judge what it would be before morning, before he could tell you what heat to have in your house. See an article to-day.

OLD WINDOW-SASHES (A Northern).—As covers for pots they will be very useful; nearly upright they would need no alteration. If laid somewhat flat, a piece had better be cut out, or several holes bored in the intervening sash bars, or the piece be removed altogether on the upper side, so as to have the wood level with the glass, and that painted or puttied would prevent wet decaying the wood. The water would thus run down the same as in a sash without any impediment; but as there would be no caps more air would be required. Even an earth, or a turf-pit in the warm, sheltered place you mention, would be useful, or you could make it of boards or bricks. We made a capital one the other day with a double wall of old boards, filling between them with sawdust. For answers about putting, see what Mr. Fish says to-day.

FUCHSIA SEERATIFOLIA (Margaret).—We think it very likely the other shoots will yet bloom, but we could not be sure without seeing it. Continue the manure-waterings. Whether it bloom or not, it had better be pruned-in in April, planted out in May, and raised and potted in the beginning of October.

OXALIS BOWIEI (Ibid).—As you have only a south window, let it remain dormant as it is. In April or May, place it on the shelf in the kitchen, where it is a little warm, though dark, if it has not started before then; and allow it to remain there until it begins to grow; then pot it and water it; place it back again until the shoots are three or more inches in length, and then place it in your window; and then, if the bulbs were well ripened, you will have a fine sight in sunny days.

ERROR.—P. 190, col. 1, line 36 from the bottom, for "it the cork be a large one," read "if the cork be a large one."

NAMES OF PLANTS (Cantab).—We think *Berberis asiatica*. (*H. Mc Douall*).—We cannot undertake to name Mosses. 1. *Aspidium spinulosum*. 2. *Polypodium vulgare*. 3. *Blechnum boreale*. 4. Too small a fragment.

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WEEKLY CALENDAR

		WEATHER NEAR LONDON IN 1852.											
M	D	DEC. 29, 1853.—JAN. 4, 1854.	Barometer.		Thermo. Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.	
D	W												
29	Th	Velvet Duck comes.	29.677—29.654	54—47	S.W.	02	9 a 8	56 a. 3	7 28	29	2 25	363	
30	F	Yellow-line Quaker; trees.	30.046—29.784	52—38	S.W.	—	9	57	sets.	30	2 54	364	
31	S	Incomplete; woods.	30.119—30.071	50—44	S.	—	9	58	5 a 16	1	3 23	365	
1	SUN	1 SUNDAY AFTER CHRIST. Cir.	30.039—29.898	52—47	S.W.	03	9	1v	6 41	2	3 51	1	
2	M	Oniscus asellus; walls.	29.863—29.703	51—44	S.W.	18	8	0	8 6	3	4 20	2	
3	Tu	Porcellio scaber; under stones.	29.798—29.663	49—30	W.	—	8	1	9 28	4	4 48	3	
4	W	Armadillo vulgaris.	29.657—29.463	52—38	S.W.	12	8	2	10 46	5	5 15	4	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 42.8° and 32.3° respectively. The greatest heat, 58°, occurred on the 30th in 1833; and the lowest cold, 12°, on the 1st in 1837. During the period 111 days were fine, and on 71 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 173.)

ARABIS HISPIDA: Alpine, or Welch Rock Cress; Alpine Lady's Smock.



Description.—It is a perennial. Root woody, tapering, running deep into the ground, subdivided and tufted at the crown, not at all creeping. Stem one, or more, three or four inches high, erect or ascending, simple or slightly branched, cylindrical, leafy, frequently quite smooth, some-

times rough towards the base, with simple spreading hairs. Root-leaves numerous, about half-an-inch long, composing several lax tufts, slightly succulent, deep green, sometimes nearly or quite smooth, but most frequently rough, especially on the upper side, with short, spreading, cloven or three-forked bristly hairs; their outline, more or less, perfectly lyrate, sometimes merely hatchet-shaped, rarely only reversed-egg-shaped, and slightly pinnatifid, always tapering at the base into a slender footstalk, longer than the leaf. Stem-leaves scattered, spear-head, blunt, mostly quite entire and smooth, sometimes hairy; the lower ones having now and then a lateral notch, and more or less of a footstalk. Flowers in terminal, solitary, erect, lax, very smooth clusters, much elongated, and somewhat wavy, after flowering. Calyx smooth, slightly spreading, membranous at the margin. Petals twice as long, pale purple, or white, with a horizontal, reversed-egg-shaped, entire border. Pods spreading, smooth, line-like, tipped with the round-headed, somewhat elevated, stigma; their valves separating at the top and bottom, slightly curved back at each end, but not rolled back; in Ehrhart's specimen they have a slender, not very prominent keel, which may also be perceived in some British ones, though not so far advanced. Seeds disposed in a simple row.

Places where found.—On moist, lofty rocks in Wales, Scotland, and Cumberland.

Time of flowering.—July.

History.—This was first discovered in Wales by Mr. Lhwyd, at the close of the seventeenth century. It has been much mistaken by botanists, and confounded not only with other species but with another genus. Hence Decandolle calls it *Arabis petraea*; Crantz describes it as *A. thaliana*; and it is the *A. Crantziana* of Ehrhart, *Sisymbrium arenosum* of Linnaeus, in his "Flora Suecica," but not of his "Species Plantarum;" *Cardamine petraea*, of Hudson, and others; *Cardamine hastulata*, of Sowerby; and *Nasturtium petreum Cambro-britannicum Johnsoni* of Ray, who, in the third volume of his "Historia Plantarum," page 413, describes the places near Llanberis, where it was observed by Mr. Lhwyd. Donn, endeavouring to adopt all former names, makes *Arabis petraea*, the species, and *Crantziana*, *hispida*, *hastulata*, *feroensis*, and *runcinata*, as its varieties. We believe that all the trivial variations on which these are founded arise merely from the varied soils and climates in which they are found. (Smith. Withering. Donn. Ray.)

MAY the year which is now withdrawing have to our readers no remembrance more poignant than the thorns of the Holly-leaves with which he is crowned at his departure; and may the gifts of the New Year have a faithful emblem in the incrustation of the cakes which seem bowled about his arrival. May the inscription on the mantle of the departing year be, "Peace" to all; and that on the breast of its successor be, "Good-will," as general. May its blossoms be unfrosted, its leaves without slugs, and its fruits ungrub-eaten! May its crops be abundant, prices low, and employment unfailing!

Our worthy friends!

A gude new year,
To you, an' a' your hearts haud dear,
At hame or far awa!

Though Fortune scrimpet favours yield,
Hale be your hearts, at hame, a-field;
Nor ever lack a cozle bield,
Frae a' the storms that blaw.

Wi' milk an' meal, for bread an' brose;
Aye gude clean sarks, hale coats an' hose;
Content in ilka e'e;

When years on years have rowed around,
An' you wi' age an' honours crowned,
May you lie down to slumber sound,
An' blythe your wakin' be.

Our incidental allusion to the Holly of this festive time, Mr. Beaton's seasonable allusion to the treatment

of the same tree in its old age, and a letter now before us, have united to bring to our remembrance a promise, long since made, to publish our notes "On the Plants of the Bible." We will at once set about redeeming that promise, and will, as nearly as may be, follow their alphabetical array.

In the 11th and 12th verses of the 10th chapter of the 2nd Book of Kings, it is stated that "The navy of Hiram, that brought gold from Ophir, brought in from Ophir great plenty of *Almug* TREES, and precious stones. And the king (Solomon) made of the *Almug* trees pillars for the house of the Lord, and for the king's house, harps also and psalteries for singers: there came no such *Almug* trees, nor were seen unto this day."

Now we shall find, if we refer to the texts which we shall insert at the conclusion of our observations, that Hiram, King of Tyre, sent timber from Lebanon in floats along the sea-coast to Joppa, from whence Solomon conveyed it to Jerusalem. It would seem, from some of those texts, that the *Almug*, or *Algum* trees, came also with the Cedar and Fir timber from Lebanon; but this we shall see hereafter is not at all irreconcilable with other texts, which state as apparently that the Gold, *Algum* trees, and precious stones were brought from Ophir.* That such was the fact we have the testimony of Josephus, who says, "The ships from Ophir brought precious stones and *Pine trees*, which Solomon made use of for supporting the Temple and his palace, as also for making musical instruments, the harps and psalteries of the Levites. The wood which was brought him at this time was larger and finer than any that had ever been brought before; but let none imagine that these *Pine trees* were like those which are now so named, and which take their denomination from the merchants who so call them, that they may procure them to be admired by those that purchase them; for those we speak of were, to the sight, like the wood of the Fig-tree, but whiter and more shining. Now, we have said thus much, that nobody may be ignorant of the difference between these sorts of wood, nor unacquainted with the nature of the genuine *Pine tree*, and the uses the King made of it."† (*Antiquit*, l. viii. c. 7.)

We are of opinion, from these quotations, that the enquiry is narrowed to two points. What country was intended by Ophir? and what cone-bearing tree of its forests was then known as the *Almug*?

There is no doubt that Ophir was most accessible to Solomon from the Red Sea, for we find that he built ships at Ezion-geber, situated on the shore of that sea, and that by the aid of mariners sent to him by king Hiram, they sailed to Ophir, and returned with gold as their freight. We are also told, that once in three years the ships returned, having as their freight gold, silver, ivory, apes, and peacocks. Now, all these are productions of Hindostan, and when we know that Josephus

(*Antiquit* l. viii. c. 4.), Vitringa, Reland, and other good authorities were of opinion that Ophir and India are identical, we have no difficulty in avowing that that opinion is our own. We are quite aware that Michaelis Rosenmuller, and others of equal research, have concluded that Ophir was some part of the south coast of Arabia, and we have no difficulty in assenting to that opinion also, for we believe that Ophir was a collective name, just as we say the East Indies, which includes all the peninsular of India and the islands and countries beyond in the China Sea. We have no doubt, those being days when the Mariner's compass was unknown, that the ships from Ezion-geber coasted along the southern shores of Arabia, and the Persian gulf, the islands at the mouth of the Indus, and down the western coast of peninsular India, and that all the places they visited were included in the general name "Ophir;" and let it not be forgotten, in support of the opinion, with which we concur, that in so doing they would probably visit a town near Goa, mentioned by Arrian as *Souppara*; that the Septuagint translate Ophir by *Soupara*, and that the ancient Egyptians called India *Sophir*.

Whether Ophir be India or the southern part of Arabia, it is in the immediate vicinity of the mouths of the Indus, which is important in support of the other opinion we have adopted, namely, that the *Almug* is the *Cedrus deodara*.

It is stated in the texts we have quoted, that *Almug* trees came from Lebanon as well as from Ophir, but that such as had never been seen at any other time came from Ophir. Now, it is a fact strongly confirmatory of our opinion, that botanists can discern no difference between the Cedar of Lebanon (*Cedrus Libani*), and the Cedar of Northern India (*Cedrus deodara*). "I incline to the opinion," says Sir W. Hooker, "that if the Deodar of the Himalaya had been discovered in a locality nearer to the Cedar of Lebanon, botanists would have considered it only a variety of that classical tree, and tracing it, as we can do, according to the testimony of travellers, from Mount Atlas in the west to the chain of Taurus and Altai on the east, we may fairly infer that the same species reaches the Himalayah range, and stretches as far as Kamaon." Such being the case, the Jewish writers may well be excused for considering the *Almug* trees of Lebanon and those of Ophir as the same, although the gigantic trunks from the latter, if they were of the Deodar, might well justify the observation, "there came none such (before) nor were seen unto this day."

Let us see how the Deodara agrees with what little we know of the *Almug* tree of the Scriptures. That those from Ophir were very large is evident; and we have this testimony of the Deodar from Major Madden. After quoting a measurement of their height as 140 feet, he proceeds to observe: "Although the Deodar abounds and attains a great girth on mountains thirty miles from the plains, all the gigantic specimens on record occur near the snowy range. On Choor, not one exceeded seventeen feet round at five high (a pretty good size too!); but at Sildes, near Looloot, on the

* 2 Chron. ii. 8, 16—ix. 10, 26, 28. 1 Kings, x. 22.

† We are aware that some translators render the Greek name employed by Josephus, "The Pitch or Torch Tree," but even this agrees remarkably with the qualities and uses of the Deodar, for Mr. Moorcroft, the Indian traveller, observes that its wood is so resinous that laths of it are used as candles.

western side of the Changsheel range, there exists a hollow, flat-crowned patriarch, thirty-six feet round at four feet from the ground; there is another of the same dimensions near the sacred fish-tank below Chenée, in Koonawar; and at Sheeong, on the north face of the Boorum Ghatee, one of thirty-three feet. Dr. Hoffmeister mentions specimens above forty feet in circumference." (*Journ. of Agricultural Soc. of India*, vii.)

To show that the Deodar is strictly coincident with the repeated declarations of Josephus, that the *Almug* was a Pine tree, we have only to mention that two of our best botanists, Mr. Lambert and Dr. Lindley, at first enrolled the Deodar among the true Pines; the one as *Abies Deodara*, and the other as *Pinus Deodara*. We need only observe upon the means of transit, that the river Indus would readily bring down the Deodar timber to the ships of Solomon, on floats, as Hiram conveyed that from Lebanon to Joppa.

The wood of the Deodar coincides in appearance and uses with all that we are told about those of the *Almug*. It ranks among the sacred trees of the Hindoos, being always planted near the temples of their idols, Muhadeva and Devi. In Kumaon, where it has been introduced, says Major Madden, all the finest trees are found nearest the temples, where the first would naturally be planted, just as in Great Britain the largest Yews are those by the churches. The pilgrim to Budureenath and Kedar-nath may occasionally be met carrying a young Cedar as the most acceptable gift to the shrine, next to the Company's Rupee, which is everywhere the most sacred and all-sufficient! In addition to this sacred regard for the Deodar, its wood is so durable that its timber has been taken out of Indian temples that have been erected from two to four centuries; and Mr. Moorcroft had specimens from the starlings of a bridge in Ladakh, where it had been exposed to the water for nearly four hundred years. This durability and hallowed character are just the circumstances which would recommend it to Solomon for adoption as a building material, for it is a disposition of the human mind, witness our evergreens at Christmas, to adopt and engraft into our own practices those most esteemed even among the heathen.

The very name *Almug* intimates that the Jews were acquainted with its durability, for Parkhurst says that the name is derived from *al*, not, and *mag*, to dissolve; or, to translate the name literally, they called it "the non-decaying tree." It is worthy of remark that one of its names among the Hindoos of Koonawur is *Kelmung*, which differs little from the Hebrew.

Lastly, the Deodar wood, from its lightness, combined with hardness, and capability of receiving a high polish, is peculiarly well fitted for making the musical instruments mentioned in the Bible as made from the *Almug*. Dr. Kittoe, who also thinks this and the Deodar are one and the same tree, observes, "All the most sacred and valuable works in peninsular India are made of this wood—and not unworthily, for such is the odour, hardness, and veiny colourations of the wood, that we, who have seen articles of furniture manufactured from it, cannot wonder at the preference."

THE second annual Exhibition of the *Torquay and South Devon Poultry Association* will take place on the 11th and two following days of January next. Old and young birds, we notice, are to compete together; but on this we should observe, that, although the boundary of 1853 will then be passed, it is still easy to make the distinction between birds over and under one year old, as the managers of the Metropolitan have determined on. We are sorry to find that fifteen shillings is all that can be given to induce competition for Geese. And the same small sum only is allotted for Turkeys. These are, surely, birds that well deserve great encouragement at all Exhibitions of useful Poultry, and are those through which we are most likely to interest farmers in the objects that such institutions must mainly regard. The rules of this Society are concise, and well arranged.

But not far from Torquay, another prize-list has been issued, for the *Devon and Cornwall* poultry-keepers. This exhibition is to take place at St. George's Hall, Stonehouse, on the 18th and 19th of January, 1854. The novelties in this list include the extension of the white-crested black Poland class to "black, white, and buff *Polands*;" the introduction of a separate class for "Ptarmigan Fowl;" the omission of the Rouen class in Ducks, all of which, the Aylesbury alone excepted, are to be shown together; and a prize for "the best six eggs of any one named breed." Size, we presume, would here be the criterion of merit; but the office of Judge must necessarily be involved in difficulties when this class comes before him in its present form. The Exhibition is not an open one, being limited to "residents in Cornwall and Devon," but such restrictions we have always thought are more wisely avoided. As this will be the third Poultry Exhibition held at Plymouth within seven months, the "fowl mania" is evidently not on the decline in that locality.

Proceeding still further west, the 5th and 6th of January offer us a show at *Truro*, where the Land's End district contains many zealous poultry-keepers, and, perhaps, we might add, even too many separate Exhibitions, but this is only an evil common to many other parts of England. The prize-list runs in the usual form, saving only the rule limiting the exhibitors of Geese and Turkeys to "*birds exceeding one-year-old*." We have always thought it desirable to have separate classes for the old and young of both these birds, but if one only can be granted it should be irrespective of age.

The *Salisbury* prize-list contains the following passage:—"As the crossing of the breeds of poultry may produce the most valuable results, all crosses must be particularised, with the pedigree of the races from which they sprung." This, of course, refers to the prize there offered for a "*cross between any breeds*." That useful table fowls may be thus produced, we have long been aware; hence our recommendation for such purposes of the mixed race between the Shanghae and Dorking, and also the latter with the Game fowl. But that the permanency of these good points can be

secured beyond the first generation, is a subject on which we have never been able to persuade ourselves from such facts as have come within our own knowledge. This meeting is to be held on the 5th and 6th of January next.

THE LEEK.

A HUMBLE subject, truly, but one of such importance in kitchen economy, as that poor cooks would cut a sorry figure without it. This vegetable has been stated to have been introduced into this country in 1562, but it is very probable that it was known long before that period. In the East, we are given to understand that its use dates as far back as the Egyptian bondage. What is termed the *London Leek* is the kind generally cultivated, as being more succulent, and, indeed, in every way superior.

There is, perhaps, as great a difference between a well-cultivated Leek and a neglected one as between the bad and good of any other vegetable; the one possessing a clean, succulent, and highly-blanching stem of some nine inches in length and two inches in diameter; the other a more whitened collar, with a bunch of loose green foliage, of no account in kitchen economics. In its highly-cultivated state it forms a very superior dish, dressed as Sea-kale; and having supped on such a dish last night, I may be supposed to be somewhat inspired by the importance of the subject.

Leeks require a long summer before them, in order to bring them to that degree of perfection of which they are capable; therefore they must be sown early, more especially as their hardihood is proverbial.

Like Celery, rich soil is indispensable; without this, it is impossible to produce the high character and well-earned recommendations here bestowed on them. As to the character of the staple of the soil, it may be observed, that by the assistance of manures they may be made to succeed in any soil found in gardens; but as to preference, I think they prefer it rather light than otherwise; and it should be as deep as for Celery—say quite half-a-yard, if possible.

They may be sown about the last week in February, or first week in March, on an elevated bed, the soil light and rich. My practice is to fork in a little old cucumber-bed soil, and then finally to spread a couple of inches of very highly-decayed dung on the surface, and on this, when made firm with the spade, to sow the seeds.

Plants thus reared will be three times as strong when finally planted in the end of May as those treated in the ordinary way. This, however, may be observed, that they must have more room in the seed-bed than is commonly allowed to them. They are too generally sown broadcast, but this is a bad plan; the drill system is by far the best here, as, indeed, in a majority of cases. The drills in the seed-bed should be about six inches apart, and the seed should be sown very thinly in the drills; and when the young plants are fairly up, they should be thinned to an inch or more apart; in fact, no two should touch. No weeds must be allowed to obtain a footing; and in the early part of April the small hoe may be used between the drills. Watering will be requisite while in the seed-bed; and matters thus carried out, we will turn our attention to the final planting.

The usual practice is to plant them in rows, singly, as any other vegetable; and this practice, I believe, prevails with the market-gardeners about the metropolis. With the latter class I will not measure lances, but this I will say, that although I pretend not to judge what practice best suits their plans, rotations, &c., I do assume to know what is fitting in private gardens, and

in pursuance of such, I must strenuously recommend what is termed the "bed system," such as I have always recommended for Celery. I find, in the case of Leeks, as with Celery, that such produces more, by far, in a given space; facilitates the blanching process; and further, moreover, a spirited rotation system; the last a matter of great importance in these days of keen practice in the art of cropping.

We select a plot of ground that is in pretty good condition, and our beds, we will suppose, are to be four feet in width, (although, be it observed, they may be as much as six feet, or as narrow as even a double row), a four-foot bed will require a plot of ground seven feet in width; less would not be convenient, and more would be wasteful. This allows a surplus on each side of half-a-yard, and this is necessary for holding what excavation is requisite. The line is then stretched, and each side of the four-foot bed "chopped out." The line removed, the soil is excavated about a moderate spade's depth, and this soil is piled up right and left, as with Celery beds. Indeed, the practice is so alike, that the recommendations for one would pretty well suffice for the other.

We must ever remember, however, that one portion of our readers would much rather read an original article, fresh from the mint of the mind, than refer back to old ones; for the latter are apt to be viewed in the same light as old newspapers—glanced at, and then filed for ever. Well, but about our poor Leeks; what more can we say? The soil excavated a spade deep, and piled compactly on either side, the next thing is to wheel in some half-rotten manure, four inches in thickness; and if it is too rich the Leeks will freely forgive the error, as they are tremendously gluttonous. This manure spread, must be forked in, and well mixed with about as much soil; and now, before planting, we generally spread a coating of old tan, or leaf-soil very mellow (or very old and powdery manure is better by far), over the surface another inch or two, and then we cover this two inches thick with a portion of the excavated soil.

The ground is now ready for planting, and a bed, four feet wide in the clear, will just take seven plants, which will be seven inches apart, leaving just three inches on each outside. The rows should be nearly a foot apart, and we bore holes with a stake for their reception. The plants are inserted in these holes, accompanied by a slight fastening with the dibble, not for fear of their being blown out of their holes, but for fear of a drying air searching out their weak points before they are able to cater for themselves. It has been strongly recommended, I am aware, not to fasten them at all, or even to fill up their holes with soil; but the reasons for this I could never learn. When planted they require a little training, as they are a very top-heavy thing when grown strong. About one-third of the foliage may be cut away, and about one-fourth of the points of the fibres; the latter operation becomes almost imperatively necessary, on account of the extreme length to which the fibres run, rendering it difficult to insert them in their holes, providing the plants are fine. A clean course of culture now becomes requisite, and an occasional watering, in dry weather, and, it may be, the use of the hoe about three weeks after they are planted; after which I advise that all weeds be pulled by the hand until earthing-up time, when the application of soil will alone stay the growth of weeds.

And, now, about earthing-up; for I would have this considered unconnected with mere cultural processes. Whatever may be people's opinion about the earthing of Celery, whether soon and frequent, or late and heavy, there is no question, I think, but that Leeks do not love to be buried until the "eleventh hour." I do not say that other plans will not succeed, but I have ever noticed them to make the most bulk when enjoying the

most freedom; I, therefore, do think that it is well to allow them a good deal of liberty before putting them under a course of training. However, about the beginning of August their fibres near the surface will become occasionally exposed to too much drought; and now it is that an earthing may be given: this will coax the surface-roots, retain moisture, and kill a crop of weeds; besides (though a collateral consideration) constituting a first stage in the blanching process. About three inches of the excavated soil may be thus applied, using much caution in its introduction.

Things may thus proceed until the end of the month, when they will have attained nearly their full size; and now it is that I would have them blanched in earnest. Two boards should be used, as in Celery-bed-culture; and with one on each side, the leaves of the Leeks first well-gathered up, the workman may proceed steadily and carefully to introduce some six inches in depth of soil. After this there will be little requisite; by the early part of October they will be a splendid produce, fit for the exhibition table, and equally fit for the cook, who will chop them into her broths or soups with little hesitation, tempted by their bold and succulent stems, white as the hoar-frost.

R. FERRINGTON.

A LESSON ABOUT OLD HOLLIES.

THE last paragraph of the left-hand column, at page 200, begins thus,—“The different kinds of pruning are intended to produce particular effects on the root of the plant.” A very wrong conclusion; the effects of pruning are to be looked for rather in the *produce*, whether it be flowers, fruit, or timber. If you want a fine specimen Geranium, you begin by pruning the old plant; the crop of flowers which follow will depend more on the system of pruning and stopping than on the training of the plant, or even the strength of the roots. The principal effect of good pruning on a fruit-tree is an abundant crop; the contrary may be the effect produced by the unskilful pruner, and yet both of them may have affected the roots in an equal degree; that is, supposing that such prunings affected the roots at all.

That settled, and before I resume the subject of “stopping,” I must refer to the old Holly-tree of *Clericus*, (see page 177), in order to give some practical advice, or how he is to deal with it for the next few years, for I have more superstition in me about Holly-trees than about all other trees put together. I was once well nigh shot by the greatest scamp in that part of the country, a poacher, for watching a fine grove of young Holly-trees, in full berry, from his class and kindred, who always paid me some nightly visits before Christmas Eve. Since that night, any one having Hollies near a church, or round a churchyard, might ask my advice respecting their management, and he would have it gratis and with good will.

The Holly-tree by the church of *Clericus* has a clean trunk ten feet high, which girths above four feet half-way up; the head of it is of large, heavy limbs, spreading wide, but now they are getting bare of young wood, and showing other symptoms of old age. The heart-wood has been rotting slowly for many years towards the top; but how low down decay has advanced, is not easy to say; all we know of it is, that from the time the bark gave way, and holes began to appear in the upper part of the trunk, the effects of wet and damp air have caused more decay in one year than could have been the case during ten years from the mere natural decay going on under the bark, as a dry covering, in the absence of atmospheric influences, and that every year the process of decay will now go on with increased effect until the holes are stopped in some way or other. Then, with respect to the larger boughs in the head of the tree, if

there is yet sound timber in them to the core, or centre, they need not all be removed. Like those of the Pollard Oak, it will be sufficient to cut them back as far as black wood is found. A very old tree always gives way at the extremities first, and decay follows downwards by slow degrees; and if it is arrested before it has reached the main trunk, or the body of the larger branches, so much the better. No more of the large branches need be cut than is really necessary to get rid of decaying heart-wood; but every branch and twig which grows out of these boughs ought to be cut off quite close, and with a smooth cut, and the smooth cut ought to be painted to keep the wet and air from the wood as much as possible. Suppose that one of the large boughs is as thick as a man's thigh, and after cutting off several lengths from the top it was found to be in a sound state about the middle of its length, let it be cut there with a slanting cut downwards with a saw; after that, the slant must be made quite smooth with a pruning chisel, and then paint it as securely as a painter would do a front door.

Any oil paint that would secure a door from the weather will do for the wound of *any tree* just as well as the best plaster that ever was made. I have used plasters of all sorts, and different kinds of paint, and even hot tar, to such wounds, with exactly the same results; some people say that oil paint is apt to kill a tree, but that is far from the truth. I have seen young Apple trees, not bigger than a walking-stick, scraped and scratched in all directions, and the bark much torn off to get rid of the mealy bugs, and after that the whole smeared with oil, without the least hurt. I am quite certain, on the contrary, that rank train oil is a good manure, rather than a poison, for plants and trees. I have often followed the tract of a rolling machine on the lawn, where the oil from the axle dripped all along, and made the grass so much greener than the other parts that you could tell the tracks for a whole season after the trickling. White lead or red lead, mixed in oil, will not hurt the stem of a Geranium, much less the stem of a tree; and I know of no application to a wound made by pruning more simple or effectual than two or three coats of good paint, and I could always so manage that the paint could hardly be seen by adding a little soot or lamp-black to it, and by dusting some dry crumbs of the old bark over the paint before it was dry.

Let *Clericus* do so to his Holly tree, all over the head, about the end of next April, which is the best time to cut in the head of that tree; but if it was an Oak or an Elm, or almost any of our deciduous trees, the operation should be early in February, before the rise of the sap, otherwise the tree might be half killed by bleeding. In no case would I spare any portion of a large bough if I found the centre wood to be giving way, or even of a very dark colour, this dark colour being, in the Holly, the first symptoms of decay; the best heart wood of the Portugal Laurel, Alaternus, Phillyrea, and others, is always of a dark colour, but not that of the Holly.

After the head of the tree was thus docked, and the wounds made by cutting either painted or covered with some plaster or another—the kind of paste or plaster is immaterial, providing it keeps off the wet weather—I would strive hard to clean out as much as possible of the rotten wood from the inside, without cutting away any of the live bark, if at all possible; and I would fill in the cavity, as much as I could, with some kind of composition that would not be likely to perish soon—a concrete of cement, or lime, or chalk, with rough gravel or pebbles, would be as good as cement and bricks, except the last coat by way of plaster covering, and that ought to be of the best cement, and so finished off as to be quite effectual against all weathers. As to plasters

of cow-dung, soft clay, hair mortar, with such and such other things added to make the thing more mysterious, I confess to put very little faith in them, except as temporary expedients.

Hot, dry days and cold nights in May, and the first part of June, is a very trying time for old trees with a feeble circulation, and more trying when all the small boughs are cut off; therefore, I should like, if I were doctoring such a tree, to cover the trunk all the way up with hay bands, but not very tight. My successor at Shrubland Park has done wonders with hay bands, and a coat of moss under them, on transplanted large trees which he was obliged to move at a wrong season; but as our old Holly has no small twigs to give vent to the upward flow, the mossing is not so essential for it. I know some first-rate gardeners who would prefer leaving a few young twigs here and there in the head of the tree, to "encourage the rising sap," but that is just the very thing I would avoid; and I introduced the case of the Silver Firs, at page 201, on purpose to show the good effects of hindering the rise of the sap into the branches, or into new growth, until it was so strong as to be able to break open buds that you could hardly see at the first rising of the sap in the spring, for this reason, that I am fully persuaded, in my own mind, that three new shoots, thus started from hidden buds, as it were, are worth thirteen shoots of equal size but two or three years old. I am equally certain that this "encouraging" of the sap, as it is called, does a great deal of harm in such cases. When the sap enters the mouths at the extremity of the roots it differs nothing from drainage water from the same ground—as it travels upwards it must mix with the sap, or juice, or blood already in the tree, as surely as whiskey is mixed with hot water in a punch-bowl; and whatever the quality of that tree may be, that quality is imparted to the rising sap long before it opens the top bud. If you tap a Sugar Maple tree at the surface of the ground, and again at a height of ten or fourteen feet up the trunk, and draw a bottle full of juice from each tapping, the top one will be twice or three times the strength of the other. I know it would be so in a Birch tree, for my grandmother told me of it, and she was a good chemist in that line before Liebig was born. Now, the faster the rise of the sap the less it takes up, or mixes with the true blood of the tree; and the more watery it is, the more watery the shoot it makes, and the more time it takes to ripen it. An unripened shoot, at the end of the first season, is never so strong and useful in after years as one that is thoroughly ripe at first. It is also the first shoot that will give way when age or accident befalls the tree; and that is one reason why very fast-growing trees seldom live so long as trees of the same kind which cannot grow so fast.

This, we must recollect, is quite a different question from that about whether the timber from a fast-growing tree is more durable or stronger than that from a slow grower of the same kind; a fast-growing tree, in the bottom of a rich valley—say an Oak—will yield better timber than one of the same age which had to struggle on for years on the bleak hill side; but the one in the valley cannot bear up so well, or so long, against the infirmities of old age as the other; and so with all trees, notwithstanding all that has been said and believed to the contrary. The longer the rising sap is pent up for want of an easy outlet, the richer it is, so to speak, and the more healthy the new shoot it makes; hence it is that I would never encourage a hasty growth in a stunted tree under the doctor.

From the middle of April to the end of May there is always a give-and-take system in our climate between the rising sap, the bright sunny day, and the chilly night; hence the chief reason for covering the stem with hay-bands—they keep off the extremes of heat

and cold, and the impulse given by the sun to the circulation is not taken by the frost at night. All these things ought to be present to the mind of the doctor or chief pruner.

If one but knew where to look for the ends of the roots of this very old tree, a good deal of strength might be got by adding fresh soil over them, and by a system of regular waterings through the summer, for a couple of seasons, after the cutting over the top, but to water near the old trunk would be next to useless; still, if the soil all over the roots could be loosened, or taken off altogether, and fresh soil added instead, there is no doubt but a little root, here and there, might strike into it, and, if only one, it would be a good beginning, and would soon increase to many. The Holly, however, is not given to much root-making—an old one in particular; and what roots they make are as hard as iron, and as bare of fibres as the trunk they support. If the tree stands near the church, some of the roots are sure to be matted against the wall, and if the breadth of 18 inches of the earth next to the wall was removed down to the matted roots, and large quantities of water poured over them, so as thoroughly to soak down a great way, and then to fill up the trench with fresh soil, I am quite sure that the old tree would revive again and last out a very long time yet.

Now, although *Clericus* and the old Holly-tree have furnished a text for all this, the subject is just as applicable to everyone of my readers who may have favourite old trees, and to every kind of old tree in the country, if they bear in mind that old evergreen trees, like his Holly, ought to be cut at the end of April, and other old trees before the rise of the sap, say in January or February. I have no doubt but *Clericus* himself has often taken the advantage of his own position to warn and advise a certain individual, or family, against prevailing errors, while the greater number of his flock took the subject as applicable to their own failings, and, let us hope, acted on his advice, as I hope many will do on mine, for I like old trees, and old friends, and old associations, so much so, indeed, that if I had my choice, I would sooner build my castle near some old stag-headed trees than in the best open park in the country without them, and any body who cut a dead branch out of my stags, would ever rue the day, if I came across him at the time.

I often think how the world would stand if old trees could speak; such tales would put men and women, villages, parishes, counties, and kingdoms, by the ears together. From the fatal night on which Pyramus and Thisbe intended to meet under the Mulberry-trees, until the last night of the old year, such trees in the by paths of life have been witnesses to more than half the world would like the other half to know, and more than I would tell them if I really did know, but I shall never make a secret of my intentions towards *THE COTTAGE GARDENER*, the Editor, and his contributors, not forgetting the "compliments of the season" to them, and to all our numerous readers, who have enabled us to go on and prosper from a small beginning.

D. BEATON.

DISAPPOINTMENTS.

THERE is no schoolmaster so successful in teaching as *Experience*. Much is done now-a-days to save us from the whip and the blow that the crusty old fellow will mercilessly use despite all the petitions and efforts of the would-be benevolent to the contrary. The old adage, "lightly come and lightly go," is based upon that principle of our nature that leads us to value an object in proportion to the difficulties its acquisition has cost us. Even gardening itself, with all its bewitching

attractions, would at once be shorn of its charms, were there not something to be continually cared for; and ever-occurring obstacles to be met and surmounted. Were it merely a thing of one idea, and that so patent and simple that the mere announcing of it would be tantamount to its full comprehension and development, then adieu to emulation and honourable rivalries, and farewell to that increasing perseverance that only receives a meet reward, when, after surmounting an obstacle, it finds it has gained a more elevated platform, whence alike to behold and aspire to seize objects of interest and beauty unknown before. Unsuccessful grumblers are most likely to remain so, because they have got into the bad habit of blaming everybody and everything but themselves. All are so fortunate but they, the luckless wights, forgetting that success is not a matter of dreams and cloudy visions of a wondrous phantom called *chance*, but in most cases, when continuous, is the sure consequence of prudence, exertion, attention, and study. Young gardeners who read these pages may need to be reminded of this; for myself, I confess, that in my younger days I derived anything but benefit from men having a high opinion of themselves, but who, somehow, never got their light from under the bushel measure that concealed it, ascribing the well-merited success and comfort of others to the fact that they were *lucky fellows*. Be assured, there is no true *continuous luck*, if you will use such a term for success in life, separate from the upright, the intelligent, the persevering, and the attentive. The dawdler, the trifler, the man who can only grasp one idea, or who is more taken up with the gratification of his appetites than the working of his mind, will, ere long, be left *nowhere* in gardening.

Most of the statements of disappointments that reach us come from earnest amateurs. Of course, they feel annoyed at their failures. I should have small hope of them if they did not. I would just have a little more, if they lectured and said some severe things to us, because we had not directed them properly; and this, despite all that an old poet has said about wrapping himself in conscious rectitude, is not the most pleasant thing in the world, unless when *right* would stand in the way; it is preferable to feel that our conduct is approved of. Now, what has made an occasional peep into the correspondence so pleasing, is, that with many needless apologies for troubling (for there is no trouble, when letters are short, at once to the purpose, and *legibly* written), almost everyone throws the blame of neglect upon his or her own shoulders; and that, too, in cases where a want of explicitness or inattention to minutiae might have justified placing some of the blame not far from the door of the writer. Any extreme treatment recommended for a particular section of plants, in particular circumstances, has, by an extra amount of generalising, been applied to plants in circumstances different, and in nature not allied; and the consequences have been disappointment and failure. A few of these, not involving anything new, but tending to show, if possible, more forcibly, the value of attention to minutiae shall now engage our attention.

KEEPING GROWING PLANTS IN THE DARK.

A correspondent, after describing a new pit, sunk two feet below ground, and raised two feet above it (at back, I presume), in a dry place, the back-wall some sixteen inches higher than the front-wall, so as to give a good slope, filling part of this up with stones and brick rubbish; and for small plants, making a platform of boards resting on bricks; and by striking cuttings early, having such nice plants in October, that even *we* should have admired, if not envied them; came to the conclusion, that once secure in this pit, the plants might be kept dark and closed up for some time. "Well, after

being in this pit nearly a fortnight of severe weather, closely covered, I was so disappointed to find nearly all the Geraniums with several leaves in a state of dreadful mould. I am sure this was caused by the warm situation, and a constant drop coming through the glass. There is and can be no damp from below. I suppose it was my own fault, leaving them too long shut up, but I thought that until the frost was entirely gone it was the safe plan. How can I prevent this dropping which ruins my plants? Would you advise the smallest quantity of putty placed at the edges of the laps of the glass?" And then, after some pleasing compliments, adds—"I am so very fond of my flowers, as even *to be willing to learn from sad experience*, so that I hope you will kindly advise me."

Now, what would the severest stickler for novelty make of such a letter as the above? Were he sure it was from a gentleman, he could not help being civil. Did the writing bear the slightest impress of a lady's hand, whatever gruffness he could muster for an occasion, would be changed into the most obliging courtesy. If he found that many beginners, just feeling their way, were apt to be led into the same mistakes and consequent disappointments, he would come to the conclusion that he might do worse than try to rectify the matter in a prominent place of *THE COTTAGE GARDENER*. Our correspondent has evidently studied all that has been said of the practicability of keeping tender plants shut up in the dark in continued cold weather, but in guarding against the cold, only just avoided being stranded on the opposite evil of a close, muggy, malarian atmosphere, without a ray of light, or a breath of fresh air to neutralise their noxious properties. We have been honoured with visitors, who expressed their surprise at finding frames and pits destitute of artificial heat, snugly covered during the day, and visions of economy in labour, and a very minimum of care and forethought flitted through their mind, only to be dispelled, when, like our correspondent, they suffered from over doing a principle that was good in itself. Many enquiries that reach us, such as—When should I light a fire in the greenhouse? What temperature should I have in it at bed-time, with an outside temperature of 30°? presuppose that we could make gardening as simple as a mere mechanical art of routine, such as a direction a watchmaker could give about the winding up of a clock or a watch. Now, it would be folly to pretend to any such powers. We can, as far as we know ourselves, detail the principles on which operations are based; we can tell all the minutiae *we* use in carrying out these operations, and even show how these are to be varied, according to circumstances; but we never can present any substitute for the anxious attention, the unwearied industry, the continuous forethought, and the constant habit of observation, as respects weather, temperature, sunshine, and shade, which the successful gardener must exhibit; and even could we do so, as has already been stated, the real pleasure of the pursuit would soon disappear; that pleasure, which even to the professional man of general intelligence must ever be regarded as fully one-half of the reward he receives for his labours.

Keeping these things in view, referring to other articles for the principles of growth and perfection, merely remembering that warmth, associated with heat, *are* the great stimuli to extension and elongation in plants, but that little or no solid matter is *added* without the presence of light, and that this extension, and that addition, can only be healthy when the foliage has access to a pure atmosphere, we see, at once, that our correspondent was right in thinking the plants had been too long shut up; that is to say, if in the northern position the weather was not much darker and colder than we have found it to be in Hertfordshire. In some days, very dark and foggy, and the nights rather sharp,

the covering has not been removed during the day ; but the weather has been too variable in its character to warrant shutting-up close for the space of eight days or a fortnight. Writing this on the 12th, there is rather a sharpish frost in the evening, and everything at all tender has been slightly covered ; but the large, fleecy clouds that are now gathering seem to prognosticate a change by the time the moon sets in the morning. Whether that change comes or not, these sudden transitions have been the character of the season, thus involving much more trouble and care. Supposing this letter of our correspondent to have been written several days ago, the fortnight mentioned would involve the last week of November, and the first, and, perhaps, a little more than the first week of December. Now, unless in the northern position the weather was very different from what it was here, the close covering so long was wrong. During the mist of the last week in November the frost was so slight as to hurt no half-hardy plant under glass ; and for several nights the weather was so close and warm that we did not cover even at night. For instance, on the last night of the month, the thermometer out-of-doors was nearly 50° at bed-time ; and next day, the first of December, was so clear and bright that every plant was exposed to the full influence of the sun ; plenty of air, back and front, was given to cold pits to dry them ; but as the clear sky betokened frost at night, the sashes were all shut between one and two o'clock ; and after thus enclosing an amount of sun-heat the sashes were protected as soon as the sun left them. Next day, though not very cold, after a sharp night, was so dull and foggy that the covering was not touched ; and the following night being again rather sharp the trouble of re-covering was avoided. But during the week afterwards, there was only a very slight frost for two or three nights ; and the days, though rather dull, were warmish, ranging from 40° to 47°, a heat sufficient, when in an enclosed, dark, moist atmosphere, to cause such plants as Geraniums to be excited into action, and to bring into development many races of fungous moulds that light and air would have kept at bay. I have, therefore, as yet, had little covering during the day.

When, therefore, I spoke the other week of keeping old plants of Geraniums so easily, and with a minimum of trouble, recollect, that if I were to give these plants sufficient heat to cause the buds to break on their bare stems, I should then be obliged to give them light and air to keep the foliage healthy. At present, I look upon the stems and the roots much as I would do on the tuber of a Potato or a Dahlia. But young plants struck in autumn, be they scarlets or others, will not endure this treatment. They must, as a general rule, be kept slowly growing. If in cold pits, and severe weather comes, in which even during the day it would not be safe to uncover the glass, we must not only keep out the ice king, but we must be sure, when we keep covered up for several days, or weeks, that the temperature within is not high and moist enough to stimulate elongation. I have had Geraniums, Calceolarias, &c., closely shut up for a month, but then I knew the inside temperature ranged from 32° to 36°, at which there is but little disposition to grow, or for moisture to be raised by evaporation. In a continuance of such weather, frosty at night, and dull during the day, when the trouble of uncovering and covering again would not have been counter-balanced by the good of a little foggy light, and yet the thermometer outside was raised a degree or two above the freezing point, we would then give a little air at the back, by elevating the sashes, shutting up again before the glass in the shade indicated the freezing point. Coolness, in such circumstances, is quite as essential as freedom from frost. In fine, bright days, when the frost was thoroughly excluded at night, it

would always be advisable to uncover for a few hours in the heat of the day, when you wished your plants to be growing.

In a continued frost, and yet days with a fair amount of sunshine, the frequency of uncovering becomes a question of labour, and the standing still of your plants. I have often, in such cold weather, allowed sunny days to pass without uncovering cold pits, because, though the sun was bright, the air was so sharp and dry as to be unfit to circulate among soft-wooded plants, and because I knew that the heat of the sun would have little or no influence in heating the enclosed pit through the covering. In a word, when such plants are covered up, day and night, for a length of time, be sure the inside temperature is not above 35°. A short time at 31°, in such circumstances, will be far preferable to 40° or 45°. Whatever length of time you shut up, whether you give a night of twelve hours, or twelve days, if you have done right, you will find your plants exactly as you left them ; and this you will never do if they have been allowed to elongate in a dark, moist, warm atmosphere. The precaution of not exposing to bright sun directly after such treatment has frequently been alluded to, and if frost should have at all penetrated, the plants should be thoroughly thawed for a couple of days before unshaded light is admitted.

PUTTYING LAPS.

We do not attach great importance to the *puttying of the laps* in glass sashes. It is of more importance to give them a good slope from back to front in winter. Unless very fine weather should ensue, there will be little chance of having it done until spring, as the glass ought to be perfectly dry. Our correspondent will also excuse us for hinting that it will not prove a remedy for the dropping of which complaint is made ; because, supposing that wet does not penetrate through some holes, or bad workmanship in the sash-bars, I believe it to be not only *possible*, but *probable*, that these moisture drops do come from below, and the pots together, and that the puttying of the laps would remove one of the escapes for it now present ; I am the more convinced of of this when I find the pit is *new*. The mortar and the bricks together would hold a fair amount of water, and it is surprising what an amount of moisture exists in soil apparently dry, and we are not informed that any means had been taken to prevent this moisture rising from the bottom of the pit whenever there was heat enough to abstract it by evaporation. Let our correspondent, next summer, fix a large bell-glass so that no air shall enter at its base, on the hardest and driest walk to be found, and on a warm sunny day the heat will saturate the enclosed air with invisible vapour, but the cold of night, acting on the glass, will condense that moisture, and it will trickle down its sides in drops, and wet the pavement that seemed yesterday so dry. According to the heat of the weather, and the amount of moisture in the air and in your pit, would a similar thing take place, the drip hanging from sash-bars, &c. being merely vapour condensed by coming into contact with a body more cold than the air in which it was suspended. One great advantage of covering the glass, not merely of cold pits, but also of forcing houses, in cold weather, is that keeping the glass warm little condensation of moisture is effected, and, consequently, there is no drip, and, what is of more consequence still, the air enclosed is not thus rendered dry by being deprived of its moisture. I recollect, when I was groping my way in these matters, with no such assistance as can be obtained so easily now, noting that in a small forcing-house where the glass was covered the atmosphere was so moist and pleasant in the morning, and the sash-bars next to perfectly dry ; but, as soon as the covering was removed, and before the sun had gained

great power, the condensed drops from the glass and sash-bars would be falling all over the house, and the only mode of getting rid of them was to insure a sufficiency of heat to enable us to give air, and thus allow the saturated air to escape. When the sun heated the glass, it acted no longer as a condensing medium. Air, therefore, and light, whenever they can be given with safety, are the great means of freedom from the evils of which our correspondent complains. I have mentioned an extreme case where air may be given, where the glass was not uncovered. In dull weather, with the outside temperature above 40°, it may be given somewhat freely, if not loaded with mist.

In frosty weather, that is, though hot in the sun it is next to freezing in the shade, it should be given with caution, that is, merely elevating the top of the sashes a little, and care being taken to shut up early after noon. Though thus the enclosed space be raised in temperature 5° or 10°, there is no danger of sickly elongation, or the healthy action of fungous vegetation from the increased temperature that comes from sunlight. A variety of statements similar to that of our correspondent, making this matter appear as a stumbling-stone, must plead as an apology for the length of these remarks, and the neglect of other matters I intended to notice.

R. FISH.

THE WOODS AND FORESTS.

(Continued from page 219.)

WHAT a glorious sight it would be to see a part of our redundant population at work on the waste lands of England, Ireland, and Scotland, draining, levelling, and otherwise preparing the wilderness for the reception of young trees hereafter to produce timber for the generations that are to come after us! Our countrymen of the poorer classes, many of whom are now, even with all our trades and commerce, driven to seek bread in foreign countries, would rather, much rather, seek work on the moors, hills, and mountains of our happy, quiet, safe land, if such works as reclaiming waste soils were forthwith proceeded with and known to be in progress. Many inhabitants of large towns and manufacturing districts imagine that all our able-bodied poor are, or may be, in full employment; but such is not the case, as I can prove, in a small degree, by my own experience; for, since I began to break up my ground for nursery purposes I have had numbers of able-bodied men applying to me for work almost daily. Men strong in sinew, and willing to labour even for the small sum of 12s. per week; and I am quite confident, were it made known that Government, or large proprietors, were about to try to make the wilderness to smile by planting it with trees, they would have plenty of strong labourers applying for leave to work at very moderate wages at such labour.

These remarks about labourers are not out of place, for without them no improvement can be accomplished in our woods, forests, or wide-spreading, desolate, naked moors. It has been suggested, and I believe, in some degree, acted upon, that our unhappy convicts might be employed in such work, rather than send them away to a penal settlement; but no true-hearted Englishman would like to see his fellow-countrymen that have transgressed the laws employed in that work that ought to be given to the honest hard-working labourer, striving to provide his family with their daily bread by the work of his hands. Give such men employment, and remove poverty from them, with all its temptations to crime, and that will lessen the numbers of the offenders against the laws.

I shall first bring into consideration how to manage

and improve existing woods, and then how to plant and manage new ones.

A well-managed wood, of course, needs no remark; it is such as have been planted and utterly neglected afterwards that need improvement. The great evil in most woods is the neglect of pruning and thinning. On these two heads I shall dilate a little.

A great mistake is often made in planting in good ground by putting in the trees too thick, and by planting the wrong kinds of trees as nurseries. If the ground is tolerably good and well drained, then plant Oak or Ash, or the Silver Fir, with Hazels for underwood. The first to be the crop, and the other the nurseries, to be cut down when they begin to draw up the Oak. The pruning of them all should commence the second or third year. The knife is then the instrument strong enough for the purpose. Wounds made with it soon heal, and are covered over with new bark, so that the timber, when sawn up into boards, will be free from knots. Cut off the side branches close to the stem, from two to three feet from the bottom. Especially pay attention to the trees intended to stand for timber; the others may be pruned less carefully.

As soon as the nurse, or superfluous trees, begin to encroach upon the timber trees, cut every second one down, they will be fit for, at least, stakes or bind wood, and will pay for the labour. The others may remain three years longer, and then remove every second one again. If they have grown well, as they will do in good ground, they will then be fit for rails, as well as the thin tops for stakes; and by this time the underwood should have a dressing by severe thinning. The great object to aim at being to have a sufficient number of trees growing for a certain number of years to shelter the permanent trees, and rather draw them up, so as to have clear, straight stems, or boles, as the woodmen term them. The pruning should be attended to yearly, removing a tier of branches every season. The time for pruning the hard-wooded timber, such as the Oak, Ash, or Elm, should be just before the spring-growth commences, after the sap has risen; then the wounds more quickly heal. The Fir tribe should be pruned in the autumn, so that the cuts may heal up before the spring. As the trees become large the pruning may be dispensed with, the object having been attained, namely, a clean, straight stem, some forty or fifty feet high. The trees should have sufficient space for the head of branches to spread out over and cover a space of ground at least from twenty-five to thirty feet diameter, and each tree should stand clear of its neighbours. No branches should be allowed to project beyond their fellows, but every side should be equally furnished, so as to balance the tree against the wind from every quarter. So far, we may consider pruning to have done its work from the infancy to the full maturity of the timber tree.

In my next, I will consider what pruning ought to have done to trees that have never been pruned or otherwise.

T. APPLEBY.

THE IRIS.

(Continued from page 220.)

IRIS PAVONIA.—(The Peacock Iris.) This species requires the greenhouse to grow it in. It is a dwarf-growing plant, seldom exceeding nine inches in height. The flowers are produced on short footstalks, and the prevailing colour is a most lovely blue, contrasted with a pure white eye. I know no plant with more bright and pleasing colours. Though so beautiful, it is not often seen in cultivation; a circumstance I cannot account for, excepting that it is a bulb, and for nine months in the year either dormant, or producing such small foliage that it is neglected and perishes. I think

this is a great pity, and plant-lovers are to blame to grudge the necessary care of such a charming flower (when in bloom), because it is not interesting or beautiful when the bloom is over. It may be ignorance is the cause, and if so, I will try to give the information how to cultivate it.

Soil.—At Pine-Apple Place we grew this plant, and bloomed it finely; and such is its beauty, that almost every visitor purchased a pot of it. The soil used consisted of loam, sandy peat or heath mould, and two-year-old decayed leaves, in equal parts.

Management.—The pots were five inches in diameter, and three bulbs were usually placed in each of these pots. The pots were well-drained, and filled with the compost to within about an inch-and-a-half of the rim; the bulbs were then placed upon the soil, and covered an inch deep, leaving half-an-inch to hold water. This potting was performed about the first week in October, and the pots were placed in a cold pit, where they remained through the winter, with the protection of a covering of double mats in severe frosty weather. About the end of February they were placed in the greenhouse, on a shelf near to the glass, and when the leaves nearly reached to it they were placed upon a platform near the front windows, where they stood till they bloomed, and then were placed on the stage amongst other plants in bloom. Such is the treatment given to imported bulbs, which always flowered most satisfactorily.

The treatment, after blooming, consists in giving a due supply of water at the root, till the leaves begin to fade, and then it should be gradually lessened in quantity, and as they are then not very slightly objects they should be placed in a cold frame to ripen the bulbs, and no water should be given to them. Where there is convenience, it is better to keep them in the dry soil in the pots, which, to prevent any water reaching the soil, should be laid on their side, and put into a cool shed or room till the planting season arrives; then shake them out of the soil, rub off the decayed roots, and repot them entirely in fresh compost.

Propagation. By Offsets.—These are produced rather sparingly, and as the bulbs are imported from Holland at a very moderate price, it is scarcely worth while to pot the offsets, yet, as some amateurs may be desirous of increasing their stock, in that case, plant the offsets in the above compost, in a box large enough to hold the entire lot of small offsets. They should be planted about September, placed in a cold pit, and grown on as long as possible, and allowed to go to rest as soon as the leaves decay. The second year the bulbs will have increased in size, and, therefore, should be planted thinner. What one box held the first year will be found sufficient to fill two of the same dimensions the second year; and in the third, many of them will flower; they should, therefore, be put into the pots, and treated exactly like the old full-sized bulbs. This is so lovely a flower that I should be sorry to see its colours varied by hybridizing, unless a larger-blossomed variety could be raised, which can only be obtained by liberal treatment, and saving seed from the largest flowers and strongest plants. Should this be attempted, the seed should be sown in wide, flat, earthen, unglazed pans, and the bulbs should be kept in the pans for the first two years, then carefully sifted out of the soil, and planted thinner in boxes, and treated in the same way as the offsets till they flower.

IRIS PERSICA (The Persian Iris).—This is, also, a bulbous species, and requires pit-culture, in pots, to grow it to perfection, and keep it for any length of time. Planted in the open border it soon perishes, probably from the moist soil and climate of this country. The flowers are variegated in a most pleasing and elegant manner, and have the additional valuable qualities of being most agreeably perfumed, or sweet-scented. Like the preceding species, it is a dwarf-growing plant, in

fact, still more so. I have never seen one more than four inches high, hence it is a suitable plant for a small basket in a window, or to place in an ornamental vase on the drawing-room table. On account of its agreeable fragrance it is a good flower for a hand bouquet.

In cultivation proceed with and follow the method described above for its lovely compeer the *Iris pavonia*.

T. APFLEBY.

(To be continued.)

RHUBARB AND ITS FORCING.

IN following out the remarks made at page 221 on the Rhubarb, we now come to the forcing of that vegetable, and in so doing some difficulties are met with which might not be expected from a plant, which, seemingly, has the power to store up the germs of its future growth; yet many have been deceived, even in forcing Rhubarb, for common as it is, there is something more required, to bring it into use at Christmas, than introduces Sea-kale at that time; for although they are both deep-rooted plants, and the edible portions of each are the same, the one is much sooner brought into use than the other.

It would appear that "the crown," or that portion of a Sea-kale plant which is above the surface, is much easier operated on by heat than is that of the Rhubarb, which, by-the-by, contains but little that assumes a woody shape, as its incipient buds, seated as they are amongst roots fleshy and torpid, are not to be started into life without an efficient action being also given to those roots, which cannot well be done without applying more heating matter to the surface of the ground than the plants will bear; hence the many failures in its forcing by the plants being scalded, or otherwise so indifferently supplied with warmth, that it is unable to reach those recesses into which it is necessary to introduce it to ensure a proper growth. These difficulties have led to another mode of applying the heat, which is that of taking up the plants and placing them on such heating material as comes to hand, whereby its growth may be reckoned on with safety to come in at a particular time. Now, to have it at Christmas, it must be taken up and forced in that way later in the season, say the end of January or February. A very little heat will bring it on in the open ground without the sacrifice which taking-up incurs, which is considerable where proper provision has not been made for it; but as this may be done with very little trouble, it may be as well here to notice the way in which that is done.

When a family requires a supply of Rhubarb as early in the season as possible, it is customary to prepare a quantity of plants every year, so that a portion may be taken up in autumn without diminishing the supply below what is wanted at the natural season; for this purpose, it is quite as well to take up a part of the old plants, say those which have been in bearing some two or three years, and the crowns have become so much enlarged, or divided, as to occupy more ground than can be covered by an ordinary Sea-kale pot of about one foot in diameter. In taking up these it is necessary to be careful, in order to preserve as much of the root unhurt as possible; dig, therefore, well round them; then undermine them the same way as is done in taking up shrubs where a ball is required. If the ground be light, loose, or open, a mat may be tied round the ball during the course of operations, for it is essential that a large bulk of earth should remain undisturbed around each ball, presenting a huge clod-like shape, often sufficiently large to be a good-sized barrow load.

When a sufficient number of these have been prepared, it is then necessary to look to the heating con-

trivance by which it is to be hastened into growth; and for that purpose almost anything will do that affords an increase of temperature. It is not unusual to find very good Rhubarb grown in the dark recess of some spare corner of the stock-hole, provided that such is to be had; an odd corner in a stable will also do; and it is often enough forced in a "cellar;" nevertheless, it is all the better by being so situated as to have a little light, although at the first commencement this agent is not wanted. In the absence of any suitable place in the back grounds, Rhubarb is sometimes honoured by an odd corner in some of the forcing or other house, where a good warmth is kept up. When this is the case it may be relied on with more certainty. It may also be forced by being placed on some bed, or heap of leaves, or dung, or, what is better, both mixed, and a box set over it, the warmth these fermenting matters impart speedily pushes the incipient buds into activity; and when it has once been induced to make a move much of the difficulty is over, for it will continue to grow in spite of a diminished temperature. Observe, that in placing it on a bed of fermenting material, care must be taken that the heat does not attain a point over that of blood-heat, otherwise the roots will be destroyed; in fact, about 70° or 80° is quite as much as it is prudent to treat it to at this early season, when so many concurring circumstances would induce a period of rest rather than one of activity, that harsh treatment is sure to result in a misfortune of that or a more decided kind. In covering up the roots in the hotbed, it is better not to use any close packing material, as wet soddened straw—leaf-mould, with a few ashes at top, will be more suitable, and even these might be omitted if it appeared likely to check the heat too much. In a usual way, it grows without much attention, and the stalks it produces are in accordance with the strength of the buds, and the vital energy of the plant which was stored away at the end of summer. Coupled with this is the gentle or forcible means taken to bring it into use: if gentle and steady, they will be fine, because they are, perhaps, assisted by the plant withdrawing nourishment from the surrounding matter it is placed in; if forcible means be used, the stalks will most likely be weak, because urged into activity, and kept there, fed solely by the accumulated juices stored away previously to its being taken up.

Having said this much on the early-forced Rhubarb, it is proper to observe, that it is also occasionally forced in the natural ground, by placing long and wide-mouthed pots over the plants, covering the surrounding ground with fresh tree-leaves or other heating material; in this mode, it rarely happens that any mode of applying it can ensure a supply of stalks before the beginning of February, after which it furnishes an abundant supply, and it has the additional advantage of not sacrificing any plants, and the shoots can be accommodated to the open air without injury, and a supply can be furnished to carry on the family until the earliest kind come into use in the open air in the common way.

It may be proper to observe, that when plants are taken up and stored away in some dry warm corner to force, watering will be necessary, and if this be done with liquid-manure, so much the better, as the requirements of the plant will be such as to greedily devour food of any kind that may be placed before it; it is also necessary to caution the inexperienced against things which at times commit sad depredations on this and other tender crops, but the rapidity with which it is propelled on soon outgrows the attacks of such tiny assailants. The more dangerous or difficult part of the business being in securing the plant against injury by the heating matter, and the earlier the season in which it is applied, the greater the danger; hence the propriety of attending carefully to this.

It is needless here to urge the growth of Rhubarb more strongly to the attention of cottagers, for it has been done so already, and its uses are tolerably well known; but I have often been grieved to see the little attention paid it by them, as some confined spot under a tree, hedge, or bush, is considered good enough; hence the certainty of its not being a satisfactory crop—for a gross feeder and robust-habited plant like the Rhubarb can ill brook to be confined in a pot, or placed in such a position as to derive no more nourishment than a moderate-sized one might give; on the contrary, I advise the cottager to give it one of the best positions in his garden, and I have no doubt but the result will be as satisfactory as that of any other crop planted in the same place.

J. ROBSON.

THE MANAGEMENT OF DOWN EWES AND LAMBS.

HAVING, in several former papers, treated of the mode of management to be adopted in keeping forward Ewes and Lambs, it is now my intention to write upon the treatment necessary for the management of the latter description of stock—those which usually drop their Lambs in the months of December, January, and February. In doing so, I must call attention to one or two very important points, for it must be admitted that both early and late lambing Ewes have each advantages which make them desirable stock, under different circumstances, such as the variations of soil and climate, as also the extent of the farm, the proportion of pasture and arable land, and the rotation of crops, &c., adopted thereon. For instance, forward Ewes, to make early Lambs, are best adapted to small arable farms, where a system of close cropping and high farming is pursued, and upon those soils where a large portion of land is annually sown to Wheat. Having two farms under my own management, one of which is stocked with horned Ewes for rearing early Lambs, the other with Down Ewes, which bring their Lambs in the months of December and January, I find the early stock get through a large quantity of roots at an early period of the season, which enables me to sow an extended breadth of Wheat; whereas, upon the farm where the Down Ewes and Lambs are kept, the root crops are not fed off, more than in time sufficient for sowing the land to Oats and Barley. Again, in the spring, when the roots are consumed, it is a common practice to sell all the forward Lambs, and two-thirds of the Ewes, before the grass and green crops are ready for feeding; yet, in the case of Down Ewes, it is good management if half the Lambs are fit for sale at the time the Turnips, &c., are consumed, say the first week in May. The Ewes are seldom fat enough for the butcher until shearing time—that is, the latter end of May, or the beginning of June. These are important points in farm economy, and must be specially provided for. In the case of early stock, the numbers will be so much diminished by sale, before the grass feeding commences, that but little, if any, encroachment will be made upon the provision for the stock of the ensuing season. On the other hand, where Down Ewes are kept an extensive provision in green

crops, such as Rye, Trifolium, and Tares, must be made, with Mangold Wurtzel of the last year's growth kept in reserve, or else, such is their requirements, when depending upon grass feed alone, that but little grass can be reserved for Hay to supply the stock of the succeeding year.

It is, therefore, quite clear, from the foregoing observations, that Down Ewes for breeding are best adapted for large farms, where a portion of the stock consists of Wether Sheep, &c., which are usually sold off out of Turnips, thereby diminishing the pressure upon the summer keeping. And they are also well calculated for farms containing a considerable proportion of pasture land, which may be fed during the summer season.

The next thing to be named is the selection of stock. There are various kinds of Down Ewes in ordinary use. Those for producing Lambs in the months of December and January, being bought in as stock chiefly from the breeding districts of Dorset, Somerset, and part of Wilts, are for the most part of Southdown origin, although of late many of these flocks have been much improved by the introduction of the improved Hampshire blood, whereby the size and value of the Ewes have been much increased; and it is found they will bring their Lambs quite as early after being crossed in this manner, the propensity for early breeding being attributable to the soil and climate of the before-named counties. When Ewes are required for rearing Lambs for sale in the summer months, and for feeding in pasture districts, it is usual to select the improved stock of the Hampshire Down breed, which is peculiarly adapted as breeding stock for the high chalk hills of Hampshire, Berkshire, and part of Wiltshire. This breed is the best for producing Lambs of large size, and where great weight is desirable; but, to be killed as Lamb, they do not usually come to hand so quick as the breed of Southdown origin.

It has been found a good plan, instead of waiting until the autumn for the purchase of Lamb Ewes of the Hampshire breed, to buy them in the month of July, and take them into enclosed grazing farms, keeping them high, and turning the Tup with them immediately; by which management, some of the best and earliest down Lambs I have ever seen have been obtained. The climate and soil of most of the enclosed arable farms of the southern and eastern counties is such as to almost ensure the Ewes having Lambs at the earliest period, although they might have been selected from stock bred upon high and exposed situations, and where the regular breeding flock does not lamb until late in the season.

When Ewes are bred between the Southdown and Hampshire, I would put them to Rams of the same cross for producing fat Lambs; on the other hand, if the Ewes are of the Hampshire breed, it is best to use a pure-bred Sussex Down Ram. I would here caution parties against the reverse of this, for I have known great losses in lambing ensue when the large Hamp-

shire Rams have been used with pure-bred Sussex Down Ewes.

The mode of keeping the Ewes previously to lambing should be carried out with great regularity, for although generous, and, indeed, high feeding may be necessary to induce the Ewes to have early Lambs, yet, after they are proved to be pregnant, very luxuriant food often proves disadvantageous, causing loss both of Ewes and Lambs.

I, therefore, advise, that at any stage of pregnancy the Ewes should be kept upon close, bare keep during the greater part of the day; and that when it is necessary to feed off grass which may be gross, it should be left until late in the season, and when it has been under the influence of night frosts for a time. It will prove more hearty and healthy food, and should be given in limited proportions once a-day, being divided off by hurdles, similar to the method adopted in feeding-off Turnips. The Forward Horned Dorsets usually lamb early enough to feed all the best grass with their Lambs at their side, and thereby make a profitable use of it. The Down Ewes, however, generally consume all the grass upon the farm before they lamb, and often require roots and Hay afterwards. I cannot admit it to be a good plan to allow them to feed the Clover seeds; these should be reserved as a turn-out for the Ewes and Lambs, for about a week or ten days previously to their going together into the Turnips. Regard must be had, however, to the weather, for, in case of frost, the Clover will receive great damage by feeding, and it is, at the same time, the worst lying the young Lambs can have during frosty nights.

It is necessary that this stock should have a dry, sheltered, roomy fold-yard provided for the lambing season. A shed, ten or twelve feet wide, enclosing two or three sides of a square, is best; the bottom should be covered about six inches in depth with peat soil, or dry loamy earth; this will not only absorb the urine, but will assist in keeping the fold dry. The fold should then be littered over with straw, and a fresh supply continually added as cleanliness requires.

A provision should be made near the fold of roots or Cabbages, in case of frost and snow; the latter is to be preferred, because they are more wholesome food for the Ewes before lambing. I cannot recommend the practice of giving roots in this case, for I have known a great loss of Ewes from premature lambing after having been fed upon Turnips. It must, however, be allowed, that of all the roots Swedish Turnips are the best for the purpose; and it is important that the Ewes should have a run upon pasture land during the day, and when feeding upon roots they ought to receive a liberal allowance of good Hay.

JOSEPH BLUNDELL.

(To be continued.)

ALLOTMENT FARMING—JANUARY.

THE compliments of the season to our allotment and cottage gardeners; may the new year afford them every chance of laying the foundation of prosperous cultivation; and may they enjoy the inestimable blessing of good health, to carry out their views. In casting our eyes on the past we shall find abundant cause to be exceedingly thankful; the *Potatoe disease*, which at one time threatened almost the entire destruction of this valuable root, has not been so bad as was anticipated; and although harvesting was, in the main, carried out under very untoward circumstances, yet we have enjoyed, what I must term, a cheap loaf, as compared with some of the prices in by-gone days. Let those who cannot duly estimate the latter blessing just be reminded, that in the year 1799 the four pound loaf was about two shillings! What would folks say in these times to sixpence a pound for bread? Thanks to God, all seas are now covered with the trading vessels of Britain, and were it not for that dreadful scourge of humanity, warfare, it would be all but impossible that famine could again be known; for we have never known harvests to fail in the same year all over the world.

Let, then, working men consider these blessings, take fresh heart, and screw up their courage anew, to meet the requirements of the rising spring.

I hope that my former advices concerning the improvement of the soil have been, at least, in part, carried out; and let me impress on my friends, the small gardeners or farmers—whom I feel very desirous of advising in a practical and profitable way—the propriety (let us say the necessity) of not losing a chance during this month of persevering in such a course. Some of our readers may, perhaps, be necessitated to lose a little time, by chance, at their regular calling; let it not, however, be lost time in reality; let it record double duty. A willing man who feels a real interest in his own plot, and whose mind occasionally glows with the anticipation of manufacturing a fat hog or two annually, and of seeing his children with ruddy and contented faces—such an one, I say, armed with a good spade, and with a fork, and wheelbarrow at his elbow, will do much, even in a few hours, if the weather will favour his operations.

Over-hours, this month, are entirely out of the question; and sooner than omit real improvements, or postpone them until spring has arrived, let me advise that a day be occasionally solicited from regular employ. February, let it be remembered, is already, as it were, appearing plain in the foreground of time's picture, and being notorious for weeping propensities, let our friends bear in mind the utility of looking well to gutters, drains, or other water-courses. I should hope, that where a regular allotment system is established of any consequence, that the founders have so managed matters, as that what we will call a "main" has been provided; that is to say, one outlet common to every secondary drain or gutter which after-experience may introduce. If such main exist, of course it will be ever necessary to see that no obstructions occur, no mud, coarse herbage, or other matter, be allowed to obstruct the passage of water.

I have before alluded to the charring of weeds, &c., and the gathering of soot as manure. The young crops must be pushed forward at railway speed when once above ground, for it is not he who sows or plants earliest, but he who, when he does so, makes a plant in the least time, that will command the greater share of success. The soot well husbanded may be put in any corner where rain cannot reach it, and as I have before advised, so I repeat, that a little guano should be added to it, and this needs nothing more to make it a compost (or what we call priming), but a few barrowfuls of old, dry, and mellowed dung, or rich soil, which will divide the atoms of guano and soot; such a mixture will force almost any young vegetable forward in an astonishing degree, and this is the best way to escape grubs, the fly, &c.

Our great Turnip-growers know all this; and it applies to almost all our crops as well as Turnips.

After preparing the soil, as thus advised, for the coming spring, in the next place, let me advise, once more, that our friends make up their minds to their course of cropping. This done, let them look well to their manure-heap, and see if anything can be done for it. I have so often said that

ordinary manure-heaps should be turned in the autumn, and formed into two portions, that I need scarcely repeat the suggestion.

The muck-heap of the ordinary cottager will show, at this period, two characters distinct enough to point to a couple of uses. The very coarsest, or recently made manure, should, in December or January, be separated, and the older residue turned by itself, and well mixed for peculiar purposes.

As to cropping affairs, in January, little can be done. If the occupier desire to have some early Peas or Beans, let him sow some *Prince Albert Peas* and *Marshall's Prolific Beans*, as early in the month as the weather will let him. If he wants early Radishes, he may sow an ounce of *Wood's Early Frame* at the same time. At the end of the month he may sow a bed of early *Horn Carrots*, in a warm corner, and, indeed, the Radishes may be sprinkled amongst them, to save labour. The Rhubarb, for early work, should have been covered in the beginning of November, on the principle of keeping in the ground-heat; if not done then, let the cultivator watch a mild period and do the thing now. If there be any Lettuce or other matter intended to be early in spring, they will be safer with some protection in hard weather; and even "pricked-out" Cabbage plants will amply repay for a little loose litter scattered over them occasionally in severe weather.

Having little more advice to give, I must now put in practice the advice once given by a sage adviser to great talkers and great writers, "to be sure to leave off when they had done."

R. ERRINGTON.

WHITE COMB.

HAVING lately had a *very bad* case of this complaint in a Cochinchina cockerel, I endeavoured to procure some cocco-nut oil to dress it with, according to the recommendation in *THE COTTAGE GARDENER*, but being unable to procure it, I determined to try an ointment known at the druggists as "citrine ointment," into which I had a little turmeric and olive oil introduced; the latter, to make it more easy of application. I rubbed the comb and roots of the feathers near the same with this ointment, and repeated the same every three or four days. After applying it four times the bird was quite well of the complaint; and as the cure was so effectual, and the trouble and cost so trifling, I think it well worth making public.—"ONE IN THE RING."

APIARIAN'S CALENDAR.—JANUARY.

By J. H. Payne, Esq., Author of "*The Bee-Keeper's Guide*," &c.

THE sun has again begun to climb, and with the lengthening and brightening days the apiarian must increase his diligence towards his little pets by attending carefully and unceasingly to their wants, for as surely as they are neglected, if only for a day, their ruin will follow; for of all seasons, during the present century, this may certainly be pronounced the worst, and without the greatest attention being given, utter ruin to every stock must follow, for scarcely one in a hundred has been able to store sufficient food to carry them through the winter; and where the population is low (which is the case, I fear, in many stocks), it is a doubtful matter if even with the most careful feeding they can be made to survive the winter.

HIVES.—Should any of the readers of *THE COTTAGE GARDENER* wish to be supplied with hives from my maker, let the order be given early, for it will save delay and inconvenience, as well as give him employment during the winter months, for his infirmities prevent his engaging in any other occupation at that season.

FLOOR-BOARDS.—The necessity of cleaning floor-boards, shutting-up the hives when snow is on the ground, watching against birds, &c., has already been fully insisted upon.

FOOD.—When the hives are very weak, that is, having only two or three pounds of honey in store, I would recommend a few pounds of syrup being given as before directed, viz., one pound of loaf-sugar, one-quarter-pint of water,

and one-quarter-pound of honey, simmered together over a slow fire until the sugar is melted, and when cold given to the bees, and at the top of the hive if possible; but where they have a little richer store, barley-sugar may be given instead of syrup.

POULTRY-YARD REPORT.

THE "Poultry-yard Reports," in your very useful periodical, from various parties, have been very interesting to me, and no doubt to all who are desirous to know what the true cost of keeping Poultry is. That of "H. G." in your number for October 20th, makes the expense much less than I have been able to do with; but most of his 136 Cochins being "chickens" (many of them perhaps small), and particularly the circumstance of his always feeding them himself, will go to account for it. I have kept Poultry, and indeed felt interested in the pursuit for the last fifteen years, but have not given attention to the *exact* quantity of food required to support a certain number of fowls until the last year. My stock comprises Cochins, Spanish, and Bantams, Turkeys, Ducks, and Guinea Fowls, kept in different yards, for the feeding of the whole of which I have weekly given the allowance. The quantity required is somewhat more than it would be for fowls alone, but not much, as it will be seen that I have only eight Turkeys. The quantity consumed, and calculation founded on it, will, I believe, however, be useful to some of your readers. That the allowance has been ample, the condition of the whole of my Poultry proves; my Cochins cockerels, weighing 9 and 10 lbs. and upwards, and not very early birds; and the condition and beauty of the plumage of my Poultry has attracted observation. My stock, when last taken, was,

182 Cochins, and Spanish, mostly chickens of April, May, and June;

5 Bantams;
5 Guinea Fowl;
8 Turkeys;
9 Ducks.

209 head of Poultry.

Weekly allowance of food for them, besides vegetables:

3 bushels of barley, at 4s. 6d. . . .	£0 13 6
2½ " " barley meal, at 4s. 6d. . . .	0 11 3
2 " " bran, at 1s. 3d. . . .	0 2 6

£1 7 3

The 209 head of Poultry, at 1½d. . . . £1 6 1½ and, allowing a trifle for turnips, as stated below, the cost is something over 1½d. per head, per week; but this must vary with the price of the food. As to *quantity* of food *per head, per week*, I take one quart of barley as sufficient for *one fowl*, as the ground of my calculation. There are thirty-two quarts in a bushel; so that a bushel will feed thirty-two full-grown fowls for a week. Whatever part is given in the form of barley-meal for soft food, 1½ lbs. will be about equal to one quart, which makes 48 lbs. of ground meal to the bushel. By taking these measures and weights as a standard, the quantity of food required for any given number of Poultry can be immediately determined. If part of the stock are chickens, two, or even three, if small, can be reckoned for a full-grown fowl. If Poultry have been regularly well fed, they will consume much less than lean, hungry things. My Poultry are fed as follows:—The first thing in the morning, when let out, they have barley thrown them; at eleven o'clock, they have soft meat in troughs, a little being thrown on the ground, that all may feed at once. It is composed of *one-third* barley-meal, *one-third* bran, and *one-third* Swede turnips, boiled and pressed through a mashing machine: these are well mixed together. The fowls are very fond of it, and it is a very filling and economical food. In the evening, they again have a little barley thrown them. Having fixed the quantity per head, as above stated, it is easy to calculate the daily allowance, or the allowance for each meal. Never give animal food; but all my Poultry having a run on grass, doubtless find insects and worms, of which they are very fond.

Before finishing this paper, which, I fear, is already too long, I beg to remark on a statement in your number of the 17th of November, on the colour of Shanghae's legs. I beg to inquire, Is the yellow leg a "specific feature?" Several of the best formed and coloured birds that I have seen have pink-white, or flesh-coloured legs, (not a dead white); and, as far as my observation has gone, the pink-white leg is generally associated with a better-coloured skin, and a whiter fluff, and with the under or downy part of the feathers all over the bird of a purer white. There, probably, are some *pale* yellow-legged Shanghaes of equal colour; but if there is anything in my observation, together with the known prejudice of all the old writers on domestic poultry, as well as of epicures and cooks, against yellow legs, as indicating coarseness of flesh, surely pink-white or flesh-coloured legs, which have been considered best for a table fowl, (except it can be shown that they are not an essential property of the Shanghae fowl,) should not be condemned. If there is such a variety or sub-variety, or if pure bred yellow-legged birds are apt to produce chickens with pink-white legs, then surely they should be cultivated in preference to an inferior coloured legged bird; for when the Shanghae fowl comes to stand entirely on its merits for use, I cannot but think its yellow legs, and frequently yellow skin, will be its chief drawbacks. I think highly of the Shanghae, or, improperly, the Cochins-China; and have been at considerable trouble and expense to get the best. Mr. John Baily, of Mount Street, says, in his little but excellent work, of the Cochins-China, "flesh-coloured legs are inadmissible." Mr. Trotter, in his essay, speaking of the colour of their legs, says a "pinkish-white is most admired." The Rev. S. Dixon is to the same effect.

My only object in making these observations is the wish, that if the Shanghae fowl with flesh-coloured legs is legitimate, it should be cultivated, and, perhaps, in preference to the yellow-legged bird. I believe, that by careful breeding, the Shanghae may be produced a short-legged, compact fowl that will vie with the Dorking for the table; and its properties as a layer and nurse, together with its hardihood of constitution, size, and docility, will constitute it, perhaps, the most desirable of fowls for general keeping. J. B.

POTATOES FOR EVER!

To be "useful" is my highest ambition, but to gain approbation through anything I may have been enabled to say, or do, for the benefit of others, is, indeed, encouraging, and nerves one on one's way. Mr. Tasker's "cheer" is genuine, and comes very "refreshing to the traveller." Of this I beg him to remain assured; for cheers to me are "angels visits, few and far between."

In regard to Mr. T.'s questions, as to "how I manage to grow more than one hundred sacks of Potatoes to the acre?" I simply answer, by the sweat of the brow, which brings me at once to a bump distinguishable upon my forehead, though whether this bump betokens system, or order, I am not phrenologist sufficient to discover; but of this I am certain, that without system, and without order, no man can raise a production sufficiently remunerative (or grow rich either), work he ever so hard. To render my answers clear and orderly, I must enter somewhat into particulars, and state, in the first place, that the extent of my Potato culture is confined to a garden which I have under a three-course system of cropping, where no similar species is allowed to occupy the same ground oftener than once in three years—*part* of the secret of the one hundred and forty sacks. My compartmental arrangements of crops I will endeavour to convey by pointing out their occupation this year, and their situation for the next, and so on.

First division—Potatoes, main crop; second earlier sorts, such as the *Fortyolds*, *Martin's Seedling*, *Looker's Orionian*, *Rylo's Flour Ball*, and *Prince of Wales*. (If I should be spared, I intend to secure seed of the latter for next year, and send it out in earnest, if our Editor, upon his trial of it, pronounces it worthy). These varieties are ripe and ready for lifting quite by the beginning of August. Their site is then trenched and well manured to receive strong plants of the winter and spring families of Cabbage-worts.

Second division—Root crops.—Turnips, Beet, Carrots, Parsnips, Onions, &c. This ground can be at liberty by the beginning of December, to become bastard trenched, and laid up in ridges for the action of the winter frosts, to be planted with the main crop of Potatoes the first favourable opportunity in March. I strongly urged autumn-planting two years ago; but as practice works progress, the system I adopted this year I intend to continue, for I am inclined to think the plan accelerated the formation of the tubers a fortnight at the least. I have my seed in preparation, an explanation of which will answer the question about "sets." I choose middling sized *whole* Potatoes, (grown under my own observation on a neighbour's ground, a light gravelly soil, opposite in its nature to my own, which is a sound gravelly loam). The seed is now disposed in single layers upon shallow wooden trays, and secured from contact with damp in an underground cellar, having a temperature ranging from 40° to 45°; its dimensions are nine feet by eighteen feet, and it is dimly lighted by a glazed aperture, measuring three feet by six inches. The young eyes on the tubers are just budding forth. I shall soon attend to the "spurting" process, and leave one shoot upon those sets which are the size of a small hen's egg, and two shoots to those which exceed that size; I follow up the disbudding as fast as the shoots appear, and, by planting time, the shoots allowed to remain are become robust and purple with health, with young roots starting from around their base, sturdy, so to speak, as the quills of a porcupine. The advantage can be plainly seen over the old enervating, spurting, and cutting method. Nothing is here lost to the potato; whatever virtue is gone out of it remains elaborated in the young shoot, and the tuber is delivered to the soil, with its powers about it, in addition to a young plant, with roots and leaves germinating, ready to compete for the light of day, and to begin their fructifying functions without loss of time.

To return to the soil. When the ridges are in a frozen state, about the beginning of February, I take the opportunity to break them up, leaving the soil something resembling to a Polar Sea in miniature; it is again forked over the first dry and favourable opportunity, preparatory for planting, which brings me to the questions—"Width of drills, and the distance at which the sets are placed?" and "Whether manure is put in the drills at the time of planting, in spring, or dug-in in autumn?"

I am a decided advocate for pure air, and manage to let it circulate as freely as possible amongst all animal and vegetable life under my charge. I give thirty inches between the rows for the main crop of Potatoes; the drills are formed in depth six inches, if the planting is conducted early in March; if towards the latter end, not quite so deep; from fourteen to eighteen inches, according to the size of the set, is the distance I place between them in the drills, a method for forming which, and the after-management, I recently explained, at page 428, in the last volume of *THE COTTAGE GARDENER*.

According to my judgment, the rule of applying raw manure to the drills at planting time is radically wrong. It must be bad practice to place a pulpy tuber into a mass of sweltering corruption, and I am confident the future culture of the Potato will prove it so. If, however, manure is decided upon, let me advise it be worked into the land now, though thus to give manure, as Mr. Beaton once justly observed, is very much like putting bread and cheese with a dead man into his coffin, where nothing is active to partake of it. A better method would be to get the land thoroughly pulverised, by bastard trenching (*viz.* keeping the bottom spit down) to the depth of two feet, the ground is thus made open for the warmth and action of the atmosphere, thus encouraging the decomposition of organic and other substances ever present in all soils which, locked out from the air, would remain there unproductive till doomsday.

If the land will bear liming, one of the greatest benefits would be found by spreading fifty bushels or more per acre, fresh from the kiln, and work it into the surface just before planting time. Its effect would prove far more productive in generating those gases which are congenial to the Potato than the most bountiful application of manure that could be applied. But, where lime would be found unsuitable to the soil, or, from its nature, soot and salt mixed

(forty bushels of soot, and twenty bushels of salt per acre), and applied in the manner of lime-dressing, is a worthy substitute; in fact, this latter dressing could not be misapplied upon any soil. I use whichever of the substances is most come-at-able at the time, and the soot and salt have, latterly, most courted my company, though, to speak truth, the first is my greatest favourite.

Now, compare the above method with the too common leave-go habit of allowing the soil to become livery, soddened, and uncared for, over-run with weeds and all the children, until the last moment in spring, when a hundred other things require attending to, to be then hurriedly and improperly dug, and similarly sown, and, what is worse, the Potatoes themselves have been allowed to undergo a like careless treatment; probably kept in jumbled masses, heated, forced into germination, and deprived of their long premature shoots over and over again, till almost every hearty property of the tuber is sacrificed and gone; then, as a final stroke, cut to pieces and placed along with raw manure in the drills at planting, thus adding, as it were, insult to injury, and laying the surest foundation for disease that could possibly be thought of. Eschew the lazy practice as you would the plague.

Third division—Mixed crops. *Early* Potatoes, Peas, Beans, and so forth. This compartment serves also for the Celery trenches, and flying crops, such as Lettuce, Endive, &c. This mixed produce is assisted solely through the season by applications of liquid-manures. It will, for next year, take the place of the winter and spring Cabbageworts, as they are used from off their ground, and the root crops then take its present site; the Parsnips settling themselves where the Celery is grown, and the other seeds sown with top-dressings of charred wood-ashes.

I have now divulged the whole secret and formula as connected with the 140 sacks. I do not consider that number anything extraordinary, as five years since my crop averaged more than 200 sacks to the acre, grown after the same plan; the ground, when taking them up, was literally covered with Potatoes; from off one particular spot I had the curiosity to measure three bushels, and the site they occupied, when growing, to produce that quantity, measured just twenty-one square yards.

I never was at Pontefract, but I am familiar, even *now*, with liquorice lozenges sold under that patronym (they are one of the best of specifics, taken in time, to frighten away a sore throat). Liquorice bespeaks also a good soil, which leads me happily to conclude some is in Mr. Tasker's possession; therefore, appropos to the latter part of his letter, which says—"I intend to plant several acres of Potatoes next year." I will state a course that has occurred to me as being likely to suit the cultivation of the Potato on a large scale, *viz.* :—

First crop—Swedes. Land ploughed and wrought into a good tilth, and formed into single ridges, measuring thirty inches apart from each apex, a thorough application of sound farm-yard dung to be then carted on to the land, and spread evenly between the furrows, the ridges then split with the plough, to close over the dung, thus forming fresh ones, and a light roller afterwards made to pass over them; the seed then drilled with guano, bone-dust, or some of the artificial manures, to hasten the young plant out of the way of the fly; then comes hand-hoeing, singling out the plants, and horse-hoeing. Cart the Turnips from the land, to be near at hand for the fattening stock.

Second crop—Potatoes. Subsoil, plough and work the land into a fine tilth by the month of March, add fresh lime, or soot and salt, as a top-dressing, harrow it in, and plant. I would invent a one-horse machine to open one drill, and fill up the last at the same time, for dexterity's sake. Directly the Potatoes appear horse-hoe between the rows. I would invent and add to the hoe a couple of slight, lateral, moulding plates, for the purpose of conveying a portion of soil upon the young plants, to secure them from frost. Next come the moulding up with a double mould board plough, and the boys to pick off the berries, should any form; just the sort of job for the boys; it does not last long. Then the taking up and carting the crop to the bay of a barn, to be evenly spread, sorted, and examined, for three weeks or a month before storing.

Third crop—Mustard. Potato-haulm burnt, land harrowed

and sown immediately with White Mustard, to be eaten off in a few weeks by sheep folded on the ground.

Fourth crop—Wheat. Land ploughed shallow, and prepared for Wheat directly after the Mustard is eaten off by the sheep; or should a cereal crop to be sown in spring be more appropriate, sow Coleworts instead of the Mustard. Tares may be sown after the cereal crops, to keep the land active the following winter, and then come the course of Turnips again.

This idea, as from one who is not a farmer (at present), is not written without regard to deference. I should be sorry to mislead, by advising a system which I have not proved by trial; still, I have confidence sufficient in the course, to say, had I the opportunity, I would work it out.—UPWARDS AND ONWARDS.

BEE-KEEPING FOR COTTAGERS.

(Continued from page 15.)

Position for Hives.—Hives should be placed as nearly as possible facing towards the south-east, it being best that they should receive the morning, but not the afternoon sun. They should be sheltered from the north-west, north, and north-east winds, by the cottage, or the hedge-rows, or trees, otherwise the bees, in trying to enter the hives on their return home, laden with spoil, are likely to be blown to the earth and destroyed; and the hives themselves are in danger of being upset. Should no such shelter be at hand, a willow hedge might easily be planted at the back and sides of the bee-stands, to break the force of the wind. Willow sticks grow like weeds, and if nicely trained and trimmed would present a very neat appearance. It is always best to have hives so placed as to be able to pass behind them. The close neighbourhood of large brooks or ponds should be avoided. Means should, if possible, be found for protecting the outside of the hives from the direct heat of the sun, for bees delight in cool places, seeking, in a wild state, the deep, cool places of the forest; whilst, therefore, in our country of short seasons, we must, during the summer months, expose the bees to the influence of the morning sun for our good, we should give them some protection from its noon-day heat for their comfort. In winter, also, the cooler the bees are kept the better; then it is best altogether to shut out the sun-light; the straw hackles and the blocks we shall presently describe, will, we think, effect both these objects.

Stocking a Bee-Garden.—In our introduction we spoke of getting swarms. Care must be taken that first swarms only be had, any others being of very little use. The hive intended to receive the swarms should be sent to the man who is to supply it sometime before it is expected to come off.

We strongly advise beginners to purchase a one-year-old hive with a young queen. It costs but a few shillings more than a swarm, and by throwing off a swarm in the first year, gives at once the delights of bee-keeping, and saves a year's time. New hives can be told from old ones by the light colour of the combs in the former. They can be removed at any time between November and February, or even as late as April, if from a distance of about three miles. In all cases the greater the distance from which they are brought, the better, as otherwise the bees might return to their old haunts, and die for want of shelter.

Age of Hives.—A hive should not be allowed to stand for more than four years, that is, five summers. Each bee that is bred leaves a thin skin in its cell; in the course of time the cells are thereby partly filled up, the bees cannot reach their full size, and the hive consequently dwindles away. In Section V. we shall point out a system of management by which it is believed the stock of bees can be kept regularly renewed.

Strength of Hives, and the Depriving System.—In keeping hives strong lies the great secret of success: every bee that is destroyed is so much loss; hence the merits of the depriving system, that is, the system whereby the honey is taken without destroying the bees. (The method of taking it, both by joining in the autumn, and by super-hiving in the summer, is the easiest thing possible, and will be ex-

plained in Section IV.) It is a well-proved fact, that the consumption of the populations of two or three hives united together is little more than that of a single hive; whether this arises from the greater numbers that can be spared from nursing, in the spring, to collect what little honey can then be had, or whether, from increased warmth and comfort, and consequent decreased hunger, has not yet been determined. It is, however, a fact; and as these strong hives collect twice the honey of a weak one, and throw earlier and stronger swarms, by all means beg the stupidified bees that such of your neighbours as continue in the old course are about to bury, and join them to your own hives. Be careful yourselves never to destroy a bee.

Cleanliness.—Take care to keep everything about the hives neat and trim, and let nothing grow in front higher than the entrances. Let no drip come upon them, no rain beat against them. By means of the feeders, to be used as hereafter described, keep the inside of the hives as dry as possible. Unless some plan be adopted when the bees are confined to the hives in the winter months, the perspiration from the bees settles, or is condensed, upon the combs, and runs down upon the floor-boards; they, being constantly damp, turn mouldy and rot, breed dysentery and destruction in the hives, and ruin all the bee-master's expectations. Personal cleanliness must also be attended to, the sense of smell in bees being very acute; they are very apt to resent inattention to this, and to punish such as approach them reeking with beer and filth.

Enemies, and Decline of Hives.—The foregoing directions having been attended to, and the hives kept strong, clean, and dry, you need fear no enemies, for you and the bees between you will prevent all attacks from spiders, wasps, hornets, ants, moths, woodlice, mice, lizards, and all such vermin, whilst fresh air and good food will prevent dysentery from making its appearance. Perhaps the chief cause of the decline of hives is the death of the queen, from old age or some other cause, when there is no young queen to succeed, and no brood in the hive from which a new queen may be reared. This danger is greatly lessened by the joining system, for if bees with a young queen are joined to a hive with an old one, the chances are that the one that is young and vigorous will, in the fight that is sure to ensue between the rival queens, quickly dispatch her old and worn-out rival.

Stings.—Numberless are the cures that have been proposed for stings, and it is difficult to say which of them is the best; we will, therefore, mention two or three, that each may be tried in turn. The first step to be taken is to draw out the sting, (which, being barbed like an arrow-head, is sure to be left in the skin), and by pressing a key, or some hollow tube, over the wound, squeeze out as much as possible of the poison that has been thrown in. As a cure, some propose tobacco-juice, applied as follows:—Moisten a little tobacco with water, and work it into a pulpy juice in the palm of the hand; then apply it in its moistened state to the wound, rub in the juice with the finger from about from five to ten minutes, moistening the tobacco afresh as the juice is rubbed-in. Others recommend that a slice of onion, covered with fine salt, should be tied over the wound. Others recommend liquor potassæ to be introduced into the wound on the point of a needle, or the nib of a clean pen. Carbonate of soda may be rubbed into the wound with good results. Others (and this plan, by-the-way, seems to be the best cure that there is for the stings of serpents), having extracted the sting, hold a piece of hot iron, or live coal, or charcoal, as near to the wound as possible, renewing the application (as long as it can be borne) until the effect of the poison has been destroyed. Others simply recommend bathing the wound in cold water. Whichever of these modes is adopted, it should be adopted quickly. Some persons are scarcely at all affected by a sting; the wound smarts a bit and that is all. With others, the poison is carried quickly through the veins, and some days elapse before the swellings that ensue subside. A cold lotion applied frequently to the swollen parts, is, perhaps, as good a remedy as any in this case. Although hardly coming within the scope of this section, the subject of stings has been introduced here as the most convenient place.

Books.—As a knowledge of the habits of bees, and with it the profit to be derived from keeping them, increases,

every man of intelligence will desire to know more about them than can be conveyed in these pages, and will willingly invest some portion of his profits in works relating to them. We can safely recommend "Taylor's Bee-keeper's Manual," as almost exhausting the subject. "The English Bee-keeper," by a Country Curate, may come next, as containing a vast number of useful hints. R.

(To be continued.)

MISCELLANEOUS POULTRY MEMORANDA.

OUT-DOOR PERCHES.—Those poultry-keepers who follow the plan of giving their fowls an unlimited supply of food must be well aware, that after having fed to satiety the birds seek repose, and that if any convenient perches or raised objects are at hand they are usually chosen for resting places in preference to the ground. Living on a cold clayey soil, it occurred to me that the fowls would be much less liable to those diseases induced by dampness, if a few low, broad perches were placed in a convenient, warm, sunny, and sheltered corner which they were in the habit of frequenting; and I find they fully appreciate my attention, invariably selecting the perches in preference to resting on the wet grass, and the advantage resulting from the use is that the dung being dropped in one place is more readily cleared away, and thus the run, if a confined one, is kept in a more wholesome condition.—W. B. TEGETMEIER.

HARDY BORDER PLANTS.

(Continued from page 230.)

ACONITUM VERSICOLOR.

THE MANY-COLOURED WOLFSPANE OR MONKSHOOD.

The Aconites are a very long family, and a great number of which are very showy, desirable plants in beds, borders, or in plantations. The very best of the whole family is the above-mentioned species, being truly a showy plant. Its roots are tuberous, supported by an immense mass of fibre. It dies quite down in the winter months, and starts up rather early in the spring, which is the very best time to increase it by division of its roots if required.

This kind grows pretty compact, therefore does very well in the same spots in the borders for many years, when tidily dealt with at the border-dressing times. It is very hardy, being a native of Siberia, and was introduced to this country in the year 1820. The whole plant is of a pale green colour, and smooth; its leaves roundish, but cut; its flower-stems panicked; a very free bloomer, producing flowers large, blue and white. They are extremely pretty, and continue from the end of June to September.

In dry, open situations, this plant rises three feet to three feet-and-a-half high, whilst in low, moist, rich soils, or in plantations near trees, the same plant will reach from four to five feet in height, and flower beautifully. Indeed, the whole family are delightful plants for plantations, for they exist among an abundance of fallen leaves, where a vast number of slugs are often found. Now, slugs, I am aware, are not very nice in their diet, but never have I known them to injure a Wolf's-bane of any kind.

Though these plants are all poisonous they are eagerly sought for bouquets.

The height of the plant already stated shows that it should be planted in the back or centre rows in the beds or borders.

It often happens that a good plant is a miffy one; but such is not the case with this Aconite, for it will flourish in any soil or situation. T. W.

THE TUMBLER PIGEON.

WITH regard to the Tumbler, should your views of the Tumbler be carried out, viz., that their extraordinary agility

in the air, the facility with which they tumble, or, what, in the Circus is termed the "back-spring," is performed by them, is the property that would have first brought the birds possessing it into favour, and which should ever since have been borne in view by their subsequent admirers; it will follow at Metropolitan, Birmingham, and all the Shows in Her Majesty's dominions, it must be said how many miles they have executed, how many times they tumble, or roll, for the Roller-Tumblers, as they are known by this name among Fanciers, roll over many times. Now, if birds are to be awarded prizes by such a standard, most assuredly it ought to be placed on their pen for Judges to see it. Did you ever witness it? if you have, I never did; and there would be great evil in it, as I observed before on the Carriers. It would open the door to falsehood, which is already too open in some regulations. The Judges, whoever they are, if competent, will award the prizes by the standard as laid down by the five properties, or, "Woe betide them!" I am sensible, it is different where prizes are held out for the best "Feathered Flying Birds;" birds better feathered than others, under this rule, are, in some measure, entitled to the prize. But the Judge has the power to withhold the prize if he does not discover sufficient merit in the bird. On the contrary, if the two birds are equal in feather, then they must be awarded by the five properties.

I will call your attention to a remark in THE COTTAGE GARDENER, &c., 29th September, 1853, Signed, Sidney Foster, Secretary, among the advertisements, in returning thanks to a liberal public, the advertisement commencing "Surrey Zoological Gardens." The sentence I allude to reads thus: He had but one feeling, which was, that the best specimens might succeed without any favoritism to a "clique" or individual. Something or other, I think, is meant here. Only one thing I do know, they have wisely refrained from offering prizes to good feathered flying birds, which disgrace all Pigeon Shows. Birmingham offered two prizes for the different varieties; 1st prize to the best Pigeon; 2nd prize to the second-best Pigeon through all the varieties; but there was not any prize held out to common good feathered flying birds; consequently, these birds must be tested by the standards as laid down, or else great dissatisfaction is given to the gentlemen of the fancy; for it is quite immaterial to them who takes the prize, their only desire being that the best birds shall be awarded the prizes. And if the Judges would only act up to those remarks in THE COTTAGE GARDENER, &c., September 15th, 1853, pages 457 and 458. It commences thus, "A rule that heads every prize list, is to this effect:—That the judges are empowered to withhold prizes should they consider that the specimens are of inferior quality. No regulations, we believe, can be more necessary, and none, we feel convinced, can be neglected with greater injury to any Society, its exhibitors, and the public." This is equally applicable to Pigeons, and at every Show ought to be enforced.

With regard to flying "Short-Faced Tumblers;" it is not so much that I object to flying on account of their being timid, weak, and going down chimney-pots (which is bad enough), thus losing birds of great value; besides, washing would not be of any use to them, as it tends to make them more coarse, which is the reverse of what is wished to be obtained in these birds, viz., delicacy.

With regard to shortness of face in a Tumbler; it is utterly impossible to produce a "Little Wonder, or Nonpareil," without it, for whatever properties a Tumbler possesses, and however near perfection it approached, to the end of the beak, or, more properly speaking, to the end of the quick of the beak, if from the iris, or inner circle of the eye, measured three-quarters-of-an-inch, it could not be pronounced a "Little Wonder, or Nonpareil." But, on the contrary, if the distance did not exceed half-an-inch, and possessing the other properties, it would be pronounced a "Little Wonder," and fanciers would go hundreds of miles to see it. It is true, these "Little Wonders" do perish in the shell, with those keepers of Pigeons who do not know how to manage them. Not so, however, with experienced fanciers, who act the part of midwife, and free the prisoner; having released the little captive, it is another thing how to get it fed. It often happens that the soft food, or "pigeon's milk," as by some called, is not up for some days after the Pigeons are hatched by their

parents. You may ascertain this by trying the crop of the old birds. The young bird must, in such case, be fed somehow, or it will die. The owner must look for the best shift he has got, and it will be advisable to place it under as small birds as possible, being better able to feed it, they will sit lighter upon it in the nest; whereas, large birds are more likely to squeeze it to death in the nest. One keeper of Pigeons may breed a hundred more in the season that are mere "foxes." A fancier may raise a few, but they are "lions." Surely this cannot be called the freaks of fancy.

The most money I ever knew given for a Pigeon was £25. It belonged to the late Mr. Manton, sexton to St. Mary's, Islington, London, and after his death was sold at auction, among his other Pigeons. It is also equally true that this was not a Shanghai cock, but it was a wonderful, pretty little Bald-head Tumbler, that would not have weighed one-twentieth part of the Shanghai cock which sold for £40 at Mr. Stevens's auction. Now, if we estimate comparative weights, it was not the weight, but the want of weight, and other properties, that caused such competition for this pretty little wonder. What will utilitarians say to a pie of such Pigeons! "Give us a Pigeon-pie made of Spanish Runts, that will weigh from two pounds to three pounds each; that will suit us better." There is a wide difference between Pigeon eating, and Pigeon fancying."—JNO. MATTHEWS EATON, 7, Islington Green, London.

TO CORRESPONDENTS.

. We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

FRIGI DOMO AS A COVERING.—R. C. says—"As you invite communications on the subject of the 'Frigi Domo' canvass, I give you my experience. I was induced to purchase owing to the favourable mention of it in your columns; and in ordering, I allowed a foot-and-a-half in five yards for shrinking (of which, by-the-by, Mr. Appleby said nothing,) on exposure to the weather, however, I found this shrinking go on to the extent of twenty-five per cent. on a yard-and-a-quarter, and how much farther it may yet go I cannot tell, as the cover has been very little used. As to the question of the 'Frigi Domo' being a perfect security against frosts, I have simply to state, that on the morning of the 17th ult. I found the glass of my frames coated with frost, under two thicknesses of Russian matting, with the 'Frigi Domo' laid over them."

LUCERNE-SOWING (*Lucerne*).—Lucerne should be drilled at ten inches space between the rows, in order that hoeing may take place, which is the most important operation in connexion with the cultivation of the crop. And at that distance, also, the land will produce a better crop than when the rows are placed either closer or farther apart.—J. B.

GROWING TURNIP-SEED (*W. Lort*).—Turnips, or Swedes, for producing seed, should be selected with care from the variety intended for propagation, being particular to choose such as are alike, and possessing the desirable properties belonging to its sort, bearing in mind that shape, colour, and density, are the most important points. Roots of a moderate size are best for producing seed. They should be transplanted early in the month of November, in order that they may strike root before hard frost sets in. They may, however, be transplanted at any time during open weather in the winter months. The earliest planted will usually produce the greatest quantity of the best seed. They are best dug in with the spade, taking care to bury the bulb, just allowing the leaves to appear above ground. New land should be chosen for the purpose, such as orchard land, for no crop will pay so well for growth under trees as Turnip-seed. Any corner of old pasture, or land of any sort, where Turnips have never been grown, will answer well, because the crop will yield more seed than when planted in arable land.—J. B.

INSECTS (*Sabina*).—The insect you state was found in old wood, in a post, which was bored through and through by them, is the caterpillar of a small, pretty moth, *Acophora sulphurella*, with the case of gnawed particles of wood, in which it resides. The borings were not, however, made by that insect, but by some *Ptinidae* or, perhaps, wood-boring wasp, and the caterpillar takes advantage of the burrows made by them to feed on the soft inner bark and fine fibres of the wood.—W. W.

SMYRNA SEEDS AGAIN (*R. M. E.*).—We had the same kind of seed from another correspondent, who was answered last week. You supply the additional fact that these seeds (not berries) are eaten at Smyrna. *Cyclamens* might do without covering them with soil, but they answer much better covered, say an inch or two over the crown of the bulb. *Isodia achillifolides* is not a shrub, but an herbaceous plant of the composite order. It was introduced from New Holland just fifty years since, and requires the protection of the greenhouse or frame in winter. *Shanghai* is pronounced Shang-aye. The enclosed is a little, trailing, half-shrubby *Mesembryanthemum*, with pinkish-red flowers of no great account. It has stood 20° of frost in dry, sheltered places near London; at Claremont, for instance.

LISTS (*Ibid.*).—After the winter is over, we shall enumerate the half-

hardy plants that stood out unharmed in different parts of the three kingdoms; and also mention the best sorts that were killed in England, and that list will be the one for you to choose from for your part of Ireland. There is a very decided objection to answering such questions in a work like THE COTTAGE GARDENER, as people will buy any plants we recommend, if they want them, without considering whether they are suitable or not to their locality; and at best we could only guess what "would be likely to stand out" with you in that part of Ireland. You can guess with more certainty than any of our writers.

BLACK SPANISH COCK (*A Subscriber*).—Our meaning has been somewhat misunderstood in the paragraph you allude to, but a reference to our report of the late Birmingham meeting will explain the objections entertained against a "continuous dark line of feather" over the eye of the Spanish fowl. We have not, indeed, yet seen the Spanish bird, male or female, that is entirely free from feathers between the face and the base of the comb, but, unquestionably, the fewer these are the better; and this will be a point for breeders to keep carefully in view. But where this space is heavily feathered, and a broad dark line thus produced, the effect is certainly injurious to the general appearance of the bird. Mr. Amphlet, of Walsall, writes as follows:—"I have a Spanish cock in my possession, eighteen months old, has just got over his moult, the pure white warted circle round his face reaches five-eighths-of-an-inch above his eye, and without either black or red markings, the white joining up to the comb. This bird has never been exhibited."

CHARACTERISTICS OF FOWLS (*A Constant Reader*).—The points on which a Golden-spangled Hamburg would be judged would include the comb, the white ear-lobe, general clearness of the ground-colour, and distinctness of the spangle, where white at the extremity of the feather, is, of course, most objectionable. The figure and proportions would also be borne in mind. When you complain of a cock as not "hen-feathered," we should entirely agree with you, so far as the hackle and body are concerned, but the characteristic Hamburg tail we should be sorry to relinquish, if it may possibly be retained with a spangled-plumage in the male birds; but here is the great difficulty, for, as in the Sebright Bantam, the peculiarities of feather in the hen can only be transferred to the cock by sacrificing some of the usual distinctive feathers of the male sex. But the whole subject to which you allude is undergoing our careful consideration.

EXTENSIVE POULTRY-KEEPING (*F. B. Fareham*).—We certainly should not anticipate profit from your scheme of keeping 360 Minorca Hens and 80 Cocks, calculating sales at the rate you do, viz. £3 10s. a thousand eggs. Much must depend on the relative situation of your market and its average prices, but, speaking generally, we should incline to the opinion that "eggs and chickens" would pay better than either separately, and that for this purpose no more judicious selection could be made than Shanghai pullets with Dorking cocks.

COMB OF SPANISH COCK (*Greenhorn*).—"A comb drooping a little" would not disqualify a Spanish cockerel, though an upright form would be of course desirable. Where the comb drops in birds of five months old, we should have little hope of any subsequent improvement by its becoming more erect. "A crooked tail" should consign the bearer of it to the class for dead poultry. A good Spanish cockerel shows his white face in the first year, with continuous improvement up to the third.

POINTS OF EXCELLENCE IN POULTRY (*James Buckley*).—The subject to which you refer, namely, the points of excellence of the various breeds of poultry is receiving our diligent investigation, although we are not at present prepared to say in what manner general acquiescence might be best obtained for the recognition of the different points of merit in the several breeds. In respect of "culture hooks," we are at a loss to see the improvement that some persons consider them to confer.

WOODEN SHUTTERS.—J. T. L. says he cannot get them six-and-a-half feet by four, under ten shillings. Mr. Fish has not had much to do with the price of yellow deal lately; but a few years back, the price, 6s. 6d., was what very nice ones were made for a gentleman in his neighbourhood, and they gave the gentleman and gardener much satisfaction. He thinks they were not quite three-quarters-of-an-inch thick, but will make inquiries, and give the answer. Of course, the more work the more cost; but all they merely want is to be planed on one side, joined together, and fastened to three cross pieces. If a ledge goes round, so much the better.

UNNAILING PEACH AND NECTARINE TREES (*C. T.*).—This is a good time. It keeps the twigs from being heated by the sun striking the wall. Your labourer can do it easily enough; let him avoid touching the trees with the hammer, and tearing out the mortar in the joints. Let him give each nail a slight tap on the head before trying to pull it out, and it will come out easily.

COLD PIT (*Ibid.*).—The glass should be raised when it rains, when it is mild, and you can prevent the rain entering. Snow is always next-door neighbour to freezing; and if a mat was on it is hardly worth while to take it off. We are grateful that a fall of snow has protected many of our pits without mats.

FIGS DROPPING WHEN NEARLY RIPE (*Ibid.*).—We should say that the roots are either too deep or not wet enough; if the former, cut a small ring of bark out of the principal shoots near the bottom, not more than will heal over the same season. Do it in summer.

HEATING GREENHOUSE AND MELON-PIT FROM THE SAME BOILER (*R. J. S. L.*).—Capital; no difficulty. We have frequently explained how it can be done. If you are your own tradesman, and want more information, write again; any ironmonger or hot-water man will not need it. Your proposed arrangement of house of peaches, vines, and plants will do; but you will have to make a point to give a preference to one, as you would see by articles of Mr. Fish lately. You would also see

what he said of plants suitable for such circumstances; but a list of good plants will be made out ere long.

CHANGING A VINE BY GRAFTING, OR INARCHING (*Ibid*).—By this you will secure the crop this year (on the old Vine, we presume), but you will not get such a young shoot as you would do by sacrificing the crop by cutting the Vine down. To save the crop, and yet change the sort, put a graft on one of the lowest shoots or spurs *directly*, if you propose starting it in January; or obtain a shoot from such a spur, and inarch a young vine upon it in May or April. In either case, every other shoot and lateral on the Vine must be stopped after the bunch, except the grafted or inarched one. You cannot graft the Vine when the sap is rising. If you do not do it now, you must wait until the Vine is in full leaf.

BARK BED FOR FORCING FRAME (*G.*).—You would have a difficulty in securing heat in cold weather, unless you could surround it by a lining of bark, or fermenting matter, such as dung, &c.; but if you merely wanted a little heat it will do. It will be time enough to sow *Canna* and *Balsams* in such a place in March, and they are not only worth sowing but worth growing.

POULTRY QUERIES.—Mr. Tegetmeier begs to state that he cannot answer any poultry queries that are sent to him by post unless the letters contain a stamped envelope for the reply, when he will be most willing to do so. All others will be noticed in the correspondent's page of *THE COTTAGE GARDENER*. Mr. Tegetmeier's present address is *Willesden, near London*.

COCHIN PULLET NOT LAYING (*R. P. M.*).—In the case of the pullet described as unable to lay her first egg, nothing can be done beyond waiting with patience for the effects of the natural expulsive efforts. The query arrived too late for reply in our last number.

POULTRY FOUNTAIN (—).—We do not know of any Poultry Fountains so cheap as sevenpence each, like those at Bury, in Lancashire. If any such could be bought in London they would sell readily.

PRICE OF SHANGHAIS (*Ibid*).—We hope never to hear again of such prices as forty and fifty pounds for one, but if you had seen at Birmingham how birds sold readily at from £2 to £5 each, you would not have thought them decreasing in value. Good birds will always fetch a good price; bad and moderate birds are, as they should be, just worth as much as is their value for table.

PEDESTAL (*Lora*).—Unless we saw where the fountain is placed, and all the accompaniments, we could not venture even to offer a suggestion.

REMOVING YEW TREES (*Croydon*).—You may very safely move a Yew, the stem of which is six inches in diameter, if you attend to the precautions we have repeatedly published.

SOFT EGGS (*Ibid*).—We have often observed that these are usually the result of inflammation of some portion of the egg organs. Try a lower diet of boiled rice and mashed potatoes for a week or ten days. The excessive number of cocks, eight to thirteen pullets, should be entirely obviated; three cocks would be quite enough. If they are all together it is very erroneous practice.

CAMELLIA STOCKS (*S. W.*).—We cannot give you the information as to price. Write to two or three of the chief London nurserymen.

POULTRY PRIZES (*J. D.*).—If you directed your poultry not to be put up to sale, the committee have no right to deduct, from the amount of your prizes, the charge arising from their own mistake.

SEA-SHORE SEEDS (*B.*).—They were broken into small pieces by the post-office punch. You will find the recipe for the sulphur, soft-soap, and clay mixture, to dress your *Vines*, in almost every one of our past volumes. *Asparagus plants*, three years old, may be taken up very safely and replanted in the spring.

PYRENEAN MAIZE.—R. W. wishes to know where this can be obtained.

ZINC LABELS (*P.*).—Scour the face with rough sandpaper, and you will find that the ink will then adhere.

MANURING ROSES (*Ibid*).—Put a mixture of your dungs, various, about six inches below the surface of the soil, over the roots, and in spring and summer give frequent waterings in a basin left in the soil. Answers to other queries next week.

NAMES OF PLANTS (*A Subscriber*).—1. *Asplenium Trichomanes*, the Maiden-hair Fern. 2. Appears to be seedling plants of some kind of *Aspidium*. 3. *Asplenium Ruta-Muraria*, the Wall-rue Spleen-wort. (A New Subscriber).—33. *Euonymus Europæus*, the common Spindle-tree or Prick-wood; and 32 is the white-fruited variety of the above, which is called *Euonymus Europæus*, var. *leucocarpus*.

CALENDAR FOR JANUARY.

ORCHID HOUSE.

AERIDES, Saccolabiums, Vandas, and such-like Indian plants, give water to once during the month. **AIR.**—In this first month of the year we frequently have severe frosty nights, and clear, bright, sunny days. The heat necessary to keep out the frost, and the bright sun, will raise the temperature of the house too high; to lower it to the

right pitch air must be given, and the apertures to give air ought to be so placed that the cold air does not rush in directly upon or through the plants. The best place for the openings is directly opposite the pipes; the air then becomes heated in a degree before it reaches the plants. **BLOCKS:** plants on these will require attention; any that are loose should be refastened; cleanse the leaves and pseudo-bulbs from green scurf and all kinds of insects. **CYRTOPIDIUMS**, see to; if any fresh growth is observable, repot in a rich compost. **DENDROBIUMS**, remove into a cool house; such as show growth may be potted and kept moderately moist. **HEAT:** keep both the houses to the lowest point of heat for the first half of the month; as the days lengthen allow the heat to increase a few degrees. **INSECTS**, continue to destroy. **MOISTURE:** on sunny days sprinkle the walks, walls, and pipes, two or three times a day. **PHAIIS GRANDIFLORUS**, now flowering, give plenty of water, and, if convenient, plunge the pots in a bed of heated leaves, or tanner's bark. **POTTING**, continue to perform upon all orchids beginning to grow. **SOILS**, procure, such as fibrous peat and turfy loam; lay them in a place to dry, to be ready for the general potting next month. **SOBRALIAS**, place in a cool house; heat 55° by day, and 50° by night; cut down all the shoots that flowered the preceding summer to allow room for the young shoots; keep them quite dry while at rest. **STANHOPEAS** in baskets, if growing, dip in tepid water. **SYNCHES**, as directed last month. **WATER** at the roots, apply carefully; do not wet the young shoots. T. APFLEBY.

PLANT STOVE.

See last month. Prepare a hotbed, e., to strike *cuttings* in. **CLIMBERS** beginning to grow, tie in. **ERANTHEMUMS**, and other winter-flowering plants, give manure water to occasionally. Turn *tun-beds*, and renew the heat by adding fresh bark. Pot a second batch of *Achimenes*, *Gesneras*, and *Gloxinias*, to succeed those done last month. Give moderate supplies of water till they begin to grow. The heat of this house must still be kept low, as too much excitement will, for want of light, cause the plants to grow weak, and the young leaves to come yellow. **SEEDS** of stove plants sow, e., giving only one watering till they begin to appear. Hard-shelled seeds steep in water heated to 180° or 200°; leave them till the water cools. **SPONGE** all large leaves, to clear off dust and insects. **SURFACE-STIR** the earth in pots, and clear off weeds and moss, and add a top-dressing of fresh compost. T. APFLEBY.

FLORISTS' FLOWERS.

AIR. Whenever the sun overcomes the frost draw off the lights, it will refresh the plants much; if kept on the plants will begin to grow, and will be more liable to suffer from close covering during severe weather. In dull, humid, mild weather, give air at the back or sides by tilting up the lights. **ANEMONES** may yet be planted; choose a dry day for the purpose; cover the tubers with a thin layer of white sand. **AURICULAS** and **POLYANTHUSES**, dress off decayed leaves; search for slugs in the frames and under the pots. **CARNATIONS** and **PICOTÉES**, water when dry; pick off decayed leaves. Any leaves not decayed, but showing spots on them, remove; it is the plague of these plants. **CHRYSANTHEMUMS** now partially at rest, water once; any advanced shoots cut off, and make cuttings of; those out-of-doors place a slight covering of tanner's bark round, to protect them from frost. **CINERARIAS** will now be showing flower; water when dry; pot seedlings; repot young, small plants, struck late, to encourage growth. **CALCEOLARIA** seedlings, pot off from pans; repot young plants; give plenty of air to; smoke frequently, to destroy green fly; attend closely to watering, and avoid wetting the leaves; pick off daily all decayed leaves, and clear the surface of the soil of moss. These are, as the term is, *miffy* plants, and soon lost, without great care through this month. As the frost in this month is often very severe, apply COVERINGS of sufficient thickness to keep it out; light, open material, such as fern or straw, with a single mat over it to prevent it blowing about, is better than a covering of three mats laid close upon each other. **DARLIAS**, examine, and clear away all decayed tops or bulbs; any roots quite gone throw out at once. **FUCHSIAS**: as soon as shoots are made half-an-inch long, slip them off, and put them in sand under hand-glasses to strike; these early short cuttings, or slips, strike easily and quickly. **HOLYHOCKS**: should the weather be open, plant them out; if not already done, the sooner this is done the better chance there is to have a good bloom. Use hoops and mats over the **TULIP** and **HYACINTH** BEDS in severe frosty or heavy rainy weather. **LOBELIAS** (Tall), keep from severe frost, and moderately dry. **PANSIES** in pots, look to, and water gently when dry; search frequently for slugs; those in the open air, in mild weather close the earth (loosened by frost) to the plants; if open weather, give a top-dressing of decayed leaves and a little soot. **PINKS**: after the frost is gone press the soil to with the hand firmly, or they will be thrown quite out of the ground. **RANUNCULUSES** may be planted, weather permitting, the last week in the month (see former number of *THE COTTAGE GARDENER* as to the manner); water, give none in frosty weather, but as soon as a change takes place, apply it early in the morning of a fine day. **VERBENAS**, give air to; trim off decaying leaves and mould; stop such as are growing and drawing up weak. T. APFLEBY.

FLOWER-GARDEN.

ANNUALS in borders, keep free from fallen leaves or other litter; and, if the weather is fine, sow a few more at the end of the month. **BULBS**, see that mice or rats do not get to them: fresh soot keeps them off for awhile. **CUTTINGS**, of various hardy deciduous shrubs, climbing *Roses*, and the like, may yet be put in. **EDINGES**, see that they are in good

order; slate edgings are the best, then box: either may be laid this month. If the soil is dry at the end of the month, plant some *GLADIOLI*, such as *Psittacinus*, *Gandavensis*, and their varieties, and continue in monthly succession to the end of April. Forget not to procure such *stakes, rods, pegs, and tallies*, as may be wanted next summer, in time. Destroy *rats, mice*, and other creatures destructive to seeds and roots. Again look at the protected plants, to see they are dry. *GRASS*, keep it clean and well rolled. *HEDGES*, evergreen and otherwise, may yet be planted and dressed. *LAYERS* of evergreens, or deciduous shrubs, may be made as the borders are cleaned. *MANURE*, in composts, apply to such flower-beds as may require assistance; and in a solid, rotten state to all roses. *MULCH* all newly-planted trees, &c. *POTTED PLANTS* in reserve garden secure from frosts. *PLANTING*, push forward in mild weather. *PRIVET*, make cuttings of the young shoots for increase. *PRUNE* and regulate every tree or bush which requires it; be more sparing with evergreens. *RANUNCULUSES*, if the soil be dry, plant a lot for another succession. *ROSES*, prune, plant, and dung, if not already done; protect *Tea* and young *Bourbons*; and wash them with strong lime and soot paint to kill moss and insects. *SEEDLINGS*, and all young plants, protect according to their hardihood and strength. *SUCKERS*, pull up and destroy, unless wanted for increase, as those of some *Roses*, &c. *TRENCH* vacant ground. *WALKS*, roll as soon as they are dry, after rains or frost, and keep them regularly cleaned. *WEEDS*, destroy everywhere. *WHEELING*, reserve for frosty or very dry weather. Four times, within our memory, after unusual mild weather to the middle of January, we experienced severe frost and rough weather; provide against another of these trials in time, and see that everything is ready for securing a supply of ICE at the first opportunity. D. BEATON.

ORCHARD.

APPLES, cleanse from blight, moss, &c.; brine and soft soap are good for such purpose. *BUSH-FRUIT*, plant, prune. *COMPOSTS*, procure and prepare. *CHERRIES*, plant, prune. *CUTTINGS*, plant of Gooseberries. *FRUIT-ROOM*, look over weekly; be sparing in giving air; remove decaying fruit, and keep the room dark. *FILBERTS*, plant. *FORK*, borders. *GOOSEBERRIES*, plant, prune. *LAYERS*, make. *LOAM*, procure for stations. *MULCHING*, perform. *MULBERRIES*, plant. *MEDLARS*, plant. *NAILS and Shreds*, dress. *NECTARINES*: See *Peaches*. *PLUMS*, plant, prune. *PEARS*, plant; prune ordinary kinds. *PEACHES*, plant, prune, train, and dress. *PLANTING* in general proceed with. *STATIONS*, make. *TRAINING* in general proceed with. *TRENCHING*, carry on. *TREES*, stake. *VINES*, prune and train. *WALNUTS*, plant. *WALL-TREES*, in general, prune and regulate. *WASH*, the following, may be applied to walls: two-parts soot, two-parts sulphur, four-parts lime, applied with a bush into every crevice; urine or soap-suds, or both, may be employed to mix with. R. ERRINGTON.

FORCING-HOUSE.

AIR: See *Ventilation*. *ASPARAGUS*, get out succession-beds on mild heat. *APRICOTS*: See *Peach*. *BOTTOM-HEATS*, sustain and assist, 75° to 78°. *CUCUMBERS*, top, dress, train. *CHERRIES*: See *Peach*. *COVERINGS*, use where possible, to save fire-heat, and to protect from extremes. *FIGS*: See *Peach*. *FIRES*, use discreetly. *GLASS*, wash all roofs. *GRAPES*, ripe, use fires and air liberally, remove decaying berries. *INSECTS*, extirpate; use fumigation, the sponge, and soft soap. *KIDNEY-BEANS*, pot, and provide successions. *NECTARINES and Peaches*, in bloom, air liberally, and shake to disperse the pollen. *MUSHROOMS*, protect well, if out doors; in house, use much water on floors. *PINES*, continue to sustain proper heat to, cover well in dung-pits, and remove linings. *PEACHES*: See *Nectarines*. *ROOFS*, protect in boxes, tubs, &c. *STRAWBERRIES*, give air and light, use liquid-manure where blossoming; introduce successions. *TARRAGON* and other *herbs*, introduce to heat. *VENTILATE* as freely as you dare. *VINERY* (Early), proceed steadily; keep a moist air; raise the heat at blooming-time; use sulphur against mildew. *WATER*, always use in a tepid state. R. ERRINGTON.

GREENHOUSE.

AIR, admit at every favourable opportunity, whenever the temperature outside is above 35°, except in windy or foggy weather, especially among *Heaths*, *Eparisies*, and *Azaleas* that you do not wish to bloom early. In foggy weather, though warm, it will be advisable to put on a little fire, to change the visible to invisible vapour. If the fog was of short continuance, and could be kept out of the house, air might be dispensed with, as well as fires, though it should not be forgotten that the motion given to the air by a little firing is a great security for the health of the plants in dull weather. Soft-wooded plants should be kept at one end of the house. *BULBS* and hardy *SURBUSHES*, such as *Lilacs*, *Azaleas*, and *Roses*, introduce from the forcing-house, placing them at the closest and warmest end of the house; *Calceolarias*, *Cinerarias*, *Geraniums*, and Chinese *Primroses*, clean, shift, and supply at times with manure-water. *CAMELLIAS* and *CYTISUSES* opening their buds, supply with manure-water. *CLIMBERS*, prune, if not already done, those that produce their flowers on the young wood; others, such as *Kennedys*, now flowering and growing, attend to; and especially train, every day the *Tropaeolums*, if you wish to prevent cumulation. No time should be lost in potting such kinds as *Tricolorum*, *Jarrattii*, *Speciosa*, *Azurea*, &c., if not already done. *FIRES*, light in close, dull weather, to enable you to give a circulation of air. Beware of heating too much when frosty, as, without due precaution, the atmosphere will be too dry; it is better to use coverings for the glass. *FUCSIAS*: the forwardest may now

be pruned and repotted. *GERANIUMS* and *CINERARIAS* will, in all likelihood, want cleaning and fumigating. The first may now be repotted for late May and early June blooming, and the latter must be shifted and kept growing, so as to prevent them throwing up flower-stalks, if late bloom and large specimens are desired. Where room is limited, a fine display is obtained by successions, and using not larger than six-inch pots. Not a withered leaf, nor an *aphis*, should stand longer than when seen. When the fly covers a leaf in myriads, smoking with tobacco then is tantamount to labour and money thrown away. *ROSES* in pots, for April and May and June blooming, in the greenhouse, finish pruning; wash with a paint of soot, sulphur, and clay; top-dress with rich compost; and plunge, if possible, in a house or pit—sawdust will be a good material—and give at first a temperature of 40° to 45° at night, and from 45° to 55° during the day. *SUCCULENTS*, unless growing and showing flower, refrain from watering. *Tropaeolum Lobbianum*, and *Manettia bicolor*, will be great ornaments now, in a warmish dry greenhouse. *WATER* plants only when requisite, and perform the operation after breakfast, using water rather higher than the medium temperature of the house. Place a few *Achimenes*, *Gesnera*, and *Gloxinia* roots into heat for early blooming. In a conservatory or greenhouse, where no hard-wooded plants to speak of are grown, and where a medium heat of 50° can be maintained—that is, 45° at night, and 55° during the day—*Poinsettia pulcherrima*, *Euphorbia Jacquiniflora*, &c., may be introduced from the stove. For the *Poinsettia* especially, if a little extra heat can be given in April, a close cold pit in summer, an average night temperature of 50° in October, and a medium of from 45° to 55° in winter, nothing can surpass the brilliancy of the large crimson floral leaves, for a couple of months, at this period, while the brilliancy remains longer in such a house than in a plant stove. (See *Calendar of last month*.) R. FISHER.

KITCHEN-GARDEN.

ARTICHOKES, attend to, shelter, &c. *ASPARAGUS*, plant in hotbed; attend to that forcing; temperature about 65°, and at night 50°. *BRANS*, plant, b.; earth-stir among often; advancing crops protect from frost; plant in hotbed, if required. *BEET* (red), plant for seed. *BROCOLI*, protect from frost. *CABBAGES*, plant, e.; sow, e.; plant for seed. *CARDOONS*, attend to, shelter, &c. *CARROTS*, sow small crop; plant for seed; (early Horn) sow on gentle hotbeds, fill the frame up well with earth, so as to bring the crop up close to the glass; attend to early thinning-out, and earth-stirring with a little pointed stick among all frame crops. *CAULIFLOWERS* in frames, attend to protection from frost, and give all open air possible in open weather, by taking the lights entirely off; also, hand-glass crops, clear away all decayed leaves and slugs, and earth-stir often; if young plants are required, a pinch of seed may be sown in pans, and placed in any heated structure, but have a gentle hotbed made up ready to prick them out upon, keeping the young crop up close to the glass. *CELERY*, earth up, shelter, &c. *COMPOSTS*, prepare and turn over. *CUCUMBERS*, sow and prick out; temperature, by day, 70° to 75°, and at night 65°. *DUNG*, for hotbeds, prepare in earnest; wheel on to vacant ground. *EARTH* for hotbeds, prepare. *EARTH-STIR*, and fasten plants disturbed by frost, &c. *ENDIVE*, blanch, protect. *FROST*, protect plants from, by temporary covering. *GROUND*, trench vacant. *HORSE-RADISH*, plant at any time during the month in open weather. *HOTBEDS*, make and attend to. *JERUSALEM ARTICHOKES*, take up and replant in open weather, at any time during the month. *KIDNEY-BEANS*, sow in succession in hotbed, &c. *KALE* (Sea), attend to; force in succession. *LETTUICES*, in frames, attend; protect from frost; sow on warm border, e. *LIQUORICE*, plant, e., and dig up three-year-old. *MELONS*, sow, for fruiting in May; day temperature 75°, night 65°. *MINT*, force, in hotbed. *MUSHROOM BEDS*, make, and attend to those producing; procure horse-droppings for. *MUSTARD and CRESS*, sow in hotbed. *ONIONS*, clear from weeds; examine stored; sow a small crop, e.; plant for seed. *PARSLEY*, sow, e.; protect from frost. *PARSNIPS*, plant for seed. *PEAS*, protect from birds by straining a single string of worsted along over the row; attend to the early pea sowing as near the first of the month as possible. It is a good maxim to always have a mouse trap or two set about the pea quarters. Sow; earth-stir; shelter from frost; and prepare stick. This is a good season for making main sowings of early and second early peas where the soil works well and the weather is open. *POTATOES*, plant in slight hotbed; and they may also be planted out in the open border, or quarters, in fine open weather, where the soil works well. Examine those in the store. *RADISHES*, sow, in hotbed; thin out as soon as the plants can be handled and sift a little dry earth among them; sow in border, e. *RAPE* (for salading), sow in hotbed; (edible-rooted), sow. *RHUBARB*, attend to; force, either in pots, to be planted in some heated structure, or covered up with pots or tubs and fermenting materials. *SALADING* (Small), sow. *SAVOYS*, plant for seed. *SPINACH*, keep clear from weeds and fallen leaves; make a small sowing towards the end of the month. *TANSEY*, plant in hotbed. *TARRAGON*, plant in hotbed. *TURNIPS*, plant for seed; should the weather seem inclined to set in severe, store in a good supply, or heap them to cover them over with coal-ashes. *WEEDS*, continually destroy, and do any work which will lessen that of the following busier months; in particular, such as planting all the main out-door crops of *Potatoes*, wherever the soil will allow of it, and the weather is favourable. *WOOD-LICE*, destroy in the mushroom-house by trapping under dry hay, and scalding it in hot-water; or by baiting small pots with boiled potatoes, or slices of potatoes under dry moss. T. WEAVER.

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WEEKLY CALENDAR

M D	D W	JANUARY 5—11, 1854.	WEATHER NEAR LONDON IN 1852.					Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.					
5	Th	Glomeris marginata; sand.	29.716—29.629	52—30	S.W.	01	8	4	11 59	6	5 42	5
6	F	EPIPHANY. Twelfth Day.	29.656—29.481	49—32	S.W.	16	7	5	morn.	7	6 9	6
7	S	Julus Londinensis; moss.	29.456—29.136	53—30	S.W.	34	7	6	1 11	8	6 35	7
8	SUN	1 SUNDAY AFTER EPIPHANY.	29.527—29.404	49—32	S.E.	—	7	7	2 22	9	7 1	8
9	M	Julus terrestris; sand, woods.	29.740—29.680	50—35	W.	01	6	9	3 32	10	7 26	9
10	Tu	Julus punctatus; tree bark.	29.664—29.300	51—42	S.	06	6	10	4 41	11	7 50	10
11	W	Julus pulchellus; moss.	29.622—29.473	51—42	S.W.	02	5	12	5 49	12	8 14	11

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 40.7° and 30.3° respectively. The greatest heat, 54°, occurred on the 6th in 1845; and the lowest cold, 6°, on the 7th in 1841. During the period 119 days were fine, and on 70 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 273.)

ARABIS CILIATA: Fringed Wall Cress.



Description.—It is a biennial. *Root* simple, tapering.

Stem generally solitary, from two to four inches, but, when cultivated, near a foot in height, erect, quite simple, leafy, cylindrical, smooth. *Root-leaves* several, in one simple tuft, various in size, reversed-egg-shaped, often reddish; tapering at the base; those of the stem alternate, stalkless, or half-clasping, elliptic-oblong; all somewhat milky-green, quite smooth on both sides, more or less evidently toothed, fringed with simple or forked, scattered, spreading, bristly hairs; some of which are often crowded into a small tuft or beard at the tips of the leaves, whilst others form a more regular fringe upon the taper bases, or foot-stalks, of the root-leaves. *Flowers* in a simple, terminal, upright, smooth, flat cluster. *Calyx* tawny, with a white edge. *Petals* twice its length, pure white, almost erect. *Pods* upright, slender, each tipped with the simple, blunt, stigma, supported by a very short, conical style; their valves undulated, channeled, and slightly keeled.

Places where found.—It is very rare, being found only on rocks by the sea-side at Rinville, Cunnamara, in the west of Ireland; and in Scotland on rocks near Loch Lea, in Glen Esk.

Times of flowering.—July and August.

History.—This is the *Turritis ciliata*, and *T. alpina*, the Fringed or Alpine Tower Mustard, of some botanists. The specific name *ciliata*, eye-lashed or fringed, alludes to the hairs round the edges of the leaves. (Smith. *Withering*.)

THERE was a time, part of what some people still call "the good old times," a time enduring to the close of the reign of George III., when Kew Gardens were sealed up from vulgar eyes, and its vegetable riches guarded as watchfully, and kept as exclusive, as the golden fruit of the Hesperides. In those times, the heart that beat beneath a fustian jacket was considered as incapable, or as unworthy, of being gladdened by the beautiful in nature; and the head that was ever put into a brown paper cap was deemed as too devoid of taste and ingenuity ever to relish or succeed in the culture of exotic plants. If the hands connected with such heads and hearts should be allowed to come within arms length of such plants, there was no telling what might happen. The least horrible event expected to occur was that they would tear off the leaves and blossoms for the mere sake of mischief, and from the mere propensity to destroy what is lovely. So Sir Joseph Banks, and others of those "old times," shut up Kew Gardens, and were sedulous and diligent to take care that when once a

plant got within their iron gates no mortal out of the peerage, and very few in it, should have a cutting or a root whereby it might be propagated.

It never entered among the thoughts of those guardians of the Kew riches that it was possible, or proper, that such things should be diffused among the people, known to them only as "the vulgar." They never seem to have suspected that by such diffusion—by fostering a taste for such things—by rendering a man's garden more varied and beautiful, his dwelling more attractive—that you weaned him from pleasures not of home-growth, and elevated his desires to strive for something less debasing than such things as could be found on and around the tap-room table.

In these "bad times" of change we go upon a different system—we have adopted as a rule, that the more people have of new plants, and the more they delight in them, the happier and the better they will be; we let them into Kew Gardens unwatched, yet not a leaf is rifled; we build, or they build for themselves, Crystal Palaces,

and we make for them parks and gardens, where they may walk unrestrained, and roll upon the grass even, and bask in the sunshine, and revel in pure air. And what is the consequence of all this? We must condense the reply into one sentence—We have had no Revolution.

If we were to search through the entire "Encyclopædia of Plants" for a single species that would illustrate best the working of the two systems, we should find none that would afford that illustration so forcibly as *THE FUCHSIA*.

Who is there among the thousands who will read this page that would not grieve if this plant of the garden, the window-sill, and the conservatory, was totally destroyed? Who would not feel that they who nursed it either in a cracked tea-pot, or in an Etruscan vase, had to suffer a lost pleasure? Yet this gay little friend of the poor as well as of the rich, would never have been gladdening them if it could have been found nowhere than in Kew Gardens as managed under the old system. It was introduced into those gardens by a Captain Firth, as far back as 1788, and there it remained when a second edition of the *Hortus Kewensis* was published in 1811. It was a close prisoner; it had not escaped to brighten up a cottager's window, much less had any one endeavoured to raise from it varieties; like all other things then at Kew, it was a forcible illustration of the hidden talent—it was useless even to the possessor.

Now, we know, and are rejoicing in the knowledge, that a hundred of its varieties are adorning our houses and gardens. This has all happened since 1815, and how it happened, how the *Fuchsia* got among the people, is well told in this narrative.*

"Soft Midsummer air, cheery with sunshine and perfumed with all the scents that it had robbed out of his nursery garden, crept in through the monthly roses at the porch and the half-open cottage door, to make itself at home in George Swayne's room. It busied itself there, sweeping and rustling about, as if it had as much right to the place and was as much the tenant of it as the gardener himself. It had also a sort of feminine and wifely claim on George; who, having been spending half an hour over a short letter written upon a large sheet, was invited by the midsummer air to look after his garden.—The best efforts were being made by his gentle friend to tear the paper from his hand. A bee had come into the room—George kept bees—and had been hovering about the letter; so drunk, possibly, with honey that he had mistaken it for a great lily. Certainly he did at last settle upon it. The lily was a legal document to this effect:—

"SIR,—We are hereby instructed to give you notice of the death of Mr. Thomas Queeks, of Edmonton, the last of the three lives for which your lease was granted, and to inform you that you may obtain a renewal of the same on the payment of one hundred guineas to the undersigned. We are, Sir,

"Your (here the bee sat upon the obedient servants),

"FLINT AND GRISTON."

"Mr. Swayne granted himself a rule to consider in his own mind what the lawyers meant by their uncertain phraseology. It did not mean, he concluded, that Messrs. F. and G. were willing, for one hundred pounds, to renew the life of Mr. Queeks, of Edmonton; but it did mean that he must turn out of the house and grounds (which had been Swayne's Nursery Garden for three generations past) unless he would pay a large fine for the renewal of his lease. He was but a young fellow of five-and-twenty; who, until recently, had

been at work for the support of an old father and mother. His mother had been dead a twelvemonth last Midsummer-day; and his father, who had been well while his dame was with him, sickened when she was gone, and died before apple-gathering was over. The cottage and the garden were more precious to George as a home than a place of business. There were thoughts of parting—like thoughts of another loss by death, or of all past losses again to be suffered freshly and together—which so clouded the eyes of Mr. Swayne, that at last he could scarcely tell when he looked at the letter whether the bee was or was not a portion of the writing.

"An old woman came in with a Midsummer cough, sounding as hollow as an empty coffin. She was a poor crone who came to do for George small services as a domestic for an hour or two every day; for he lighted his own fires, and served up to himself in the first style of cottage cookery his own fat bacon and potatoes.

"I shall be out for three hours, Milly," said George, and he put on his best clothes, and went into the sunshine. 'I can do nothing better,' he thought, 'than go and see the lawyers.'

"They lived in the City; George lived at the east end of London, in a part now covered with very dirty streets; but then covered with copse and field, and by Swayne's old-fashioned nursery ground, then crowded with stocks and wallflowers, lupins, and sweet peas, pinks, lavender, hearts-ease, boy's-love, old man, and old-fashioned plants; for it contained nothing so tremendous as Schizanthuses, Escol-zias, or Clarkis pulchellas, which were weedy little atomies, though they sound enough to rival any tree on Lebanon. George was an old-fashioned gardener in an old-fashioned time; for we have here to do with events which occurred in the middle of the reign of George the Third. George then—I mean George Swayne, not Georgius Rex—marched off to see the lawyers, who lived in a dark court in the City. He found their clerk in the front office, with a marigold in one of his button-holes; but there was nothing else that looked like summer in the place. It smelt like a monthly shut up tool-house; and there was parchment enough in it to make scarecrows for all the gardens in Kent, Middlesex, and Surrey.

"George saw the junior partner, Mr. Griston, who told him, when he heard his business, that it was in Mr. Flint's department. When he was shown into Mr. Flint's room, Mr. Flint could only repeat the instructions of the landlord.

"You see, my lad," he said, "these holdings that have been let hitherto for thirty pounds per annum are now worth fifty. Yet my client, Mr. Crote, is ready to renew the lease for three more lives at the very slight fine we have named to you. What would you have more reasonable?"

"Sir, I make no complaint," George answered; "only I want to abide by the ground, and I have not so much money as you require. I owe nobody a penny; and to pay my way and lay by enough money for next year's seeds and roots, has been the most that I can manage. I have saved fifteen pounds. Here it is, Sir; take it, if it will help me in this business."

"Well," Mr. Flint suggested, "what do you say to this? I make no promise, but I think I can persuade Mr. Crote to let you retain possession of your land, for—shall we say?—two years, at the rent of fifty pounds; and at the expiration of that term, you may perhaps be able to pay the fine and to renew your lease."

"I will accept that offer, Sir." A homespun man clings to the walls of home. Swayne's nursery would not support so high a rental; but let the future take thought for itself—to postpone for two years the doom to quit the roof-tree under which his mother suckled him was enough for George.

"So he turned homeward and went cheerfully on his way by a short cut through narrow streets and lanes that bordered on the Thames. His gardener's eye discovered all the lonely little pots of mignonette in the upper windows of the tottering old houses; and, in the trimmer streets, where there were rows of little houses in all shades of white-wash, some quiet fresh looking, inhabited by people who kept their windows clean, he sometimes saw as many as four flower pots upon the window sill. Then there were the squares of turf, put, in weekly instalments of six inches, to the credit

* This narrative is substantially true; we believe it has been published in some popular work, but it was sent to us as an extract from an Irish newspaper.

of caged larks, for the slow liquidation of the debt of green fields due to them. There were also parrots; for a large number of the houses in those river streets were tenanted by sailors who brought birds from abroad. There were also all sorts of grotesque shells; and one house that receded from its neighbours' had a small garden in front, which was sown over with shells instead of flowers. The walks were bordered with shells instead of boxwood, and there were conches upon the wall instead of wall-flowers. The summer-house was a grotto; but the great centre ornament was a large figure-head, at the foot of which there was a bench erected, so that the owner sat under its shadow. It represented a man with a great beard, holding over his shoulder a large three-pronged fork; which George believed to be meant for Neptune. That was a poor garden, thought George; for it never waved nor rustled, and did not by one change of feature—except that it grew daily dirtier—show itself conscious of the passage of the hours and days, and months and seasons.

"I interested George a great deal more to notice here and there the dirty leaves of new kinds of plants; which, brought home among the sailors, struggled to grow from seed or root. Through the window of one house that was very poor, but very neat and clean, he saw put upon a table to catch the rays of summer sun, a strange plant in blossom. It had a reddish stalk, small-pointed leaves; and from every cluster of leaves hung elegant red flower-bells with purple tongues. That plant excited him greatly; and, when he stooped to look in at it, he felt some such emotion as might stir an artist who should see a work by Rubens hung up in a pawnbroker's shoe window. He knocked at the green door, and a pale-faced girl opened it, holding in one hand a piece of unfinished needlework. Her paleness left her for a minute when she saw it was a stranger who had knocked. Her blue eyes made George glance away from them before he had finished his respectful inquiry. 'I beg your pardon,' he said, 'but may I ask the name of the flower in the window, and where it came from?'

"Will you walk in, if you please, sir," said the girl, "mother will tell you all she knows about it."

"With two steps the young gardener strode into the small front room where a sick and feeble woman sat in an arm chair. The room was clean and little furnished. There was only sand upon the floor; and, on the table with some more of the girl's work, was part of a stale loaf, flanked with two mugs that contained some exceedingly blue and limpid milk. George apologised for his intrusion; but said what his calling was, and pleaded in excuse the great beauty and novelty of the plant that had attracted him.

"Ay, ay, but I prize it for more than that," said Mrs. Ellis, "it was brought to me by my son. He took it as a cutting, and he brought it a long way, dear fellow, all the way from the West Indies, nursing it for me. Often he let his own lips parch, sir, on the voyage, that he might give water enough to the flower that he took home for his mother. He is a tender-hearted boy, my Harry."

"He is young, then?"

"Well, he is not exactly a boy, sir; but they are all boys on board ship, you understand. He could carry off the house upon his back, Harry could; he is so wonderful broad-chested. He's just gone a long voyage, sir, and I'm feared I shall be gone a longer before he comes back; and he said when he went, 'Take care of the plant, mother, it'll have hundreds of bells to ring when I come back to you next year.' He is always full of his fun, sir, is my Harry."

"Then ma'am," George stammered, "it is a plant you wouldn't like to part with."

"The poor woman looked angry for a moment; and then, after a pause, answered gently, 'No, sir, not until after my time comes.'

"The young gardener, who ought to have gone away, still bent over the flower. The plant was very beautiful, and evidently stood the climate well, and it was of a kind to propagate by slips. George did not well know what to say or do. The girl who had been nimbly stitching, ceased from work and looked up wonderingly at the stranger, who had nothing more to say, and yet remained with them. At last, the young man, with the colour of the flower on his cheeks, said, 'I'm a poor man, ma'am, and not much taught. If I'm going to say anything unbecoming, I hope

you'll forgive it; but if you could—if you could bring your heart to part with this plant, I would give you ten guineas for it, and the first good cutting I raise shall be yours.'

"The girl looked up in great astonishment, 'Ten guineas!' she cried, 'why, mother, ten guineas would make you comfortable for the whole winter. How glad Harry will be!'

"The poor old woman trembled nervously; 'Harry told me to keep it for his sake,' she whispered to her daughter, who bent fondly over her.

"Does Harry love a flower better than your health and comfort?" plead Harry's sister.

"A long debate was carried on in low tones, while George Swayne endeavoured to look as though he were a hundred miles off, listening to nothing. But the loving accents of the girl, debating with her mother tenderly, caused Mr. Swayne—a stout and true hearted young fellow of twenty-five—to feel that there were certainly some new thoughts and sensations working in him. He considered it important to discover from her mother's manner of addressing her that the name of the young woman was Susan. When the old lady at last consented with a wish to George's offer, he placed ten guineas on the table beside the needlework, and only stole one glance at Susan, as he bade good-bye, and took the flower-pot away, promising again earnestly that he would bring back to them the first good cutting that took root.

"George Swayne, then, having the lawyers almost put out of his head, carried the plant home and duly busied himself in his greenhouse, over the multiplication of his treasure. Months went by, during which the young gardener worked hard and eat sparingly. He had left to himself but five pounds for the general maintenance of his garden; more was needed, and that he had to pinch, as far as he dared, out of his humble food and other necessities of existence. He had, however, nothing to regret. The cuttings of the flower-bells thrived, and the thought of Susan was better to him than roast-beef. He did not again visit the widow's house. He had no right to go there, until he went to redeem his promise.

"A year went by: and when next July came George Swayne's garden and greenhouses were in the best condition. The new plant had multiplied by slips, and had thriven more than he could have expected. The best plant was set by until it should have reached the utmost perfection of blossoms to be carried in redemption of the promise made to widow Ellis. In some vague way, too, Mr. Swayne now and then pondered whether the bells it was to set ringing after Harry had returned might not be after all the bells of Stepney parish-church.—And Susan Swayne did sound well, that was certain. Not that he thought of marrying the pale girl, whose blue eyes he had only seen, and whose soft voice he had only heard once; but he was a young fellow and he thought about her, and young fellows have their fancies, which do now and then shoot in unaccountable directions.

"A desired event had happened one morning. The best customer of Swayne's nursery grounds, the wife of a city knight, Lady Salter, who had a fine seat in the neighbourhood, alighted from her carriage at the garden gate. She had come to buy flowers for the decorations of her annual grand summer party; and George, with much perturbation, ushered her into his greenhouse, which was glowing with the crimson and purple blossoms of his new plant. When Lady Salter had her admiration duly heightened by the information that there were no other plants in the country like them; that, in fact, Mr. Swayne's new flowers were unique, she instantly bought two slips at a guinea each, and took them home in triumph. Of course, the flower-bells attracted the attention of her guests, and of course, she was very proud to draw the attention to them. The result was that the carriages of the great people of the neighbourhood so clogged up the road at Swayne's nursery, day after day, that there was no getting by them. George sold for a guinea each all the slips he had potted, keeping only the continuance of his trade, and carefully reserving his finest specimen. That in due time he took to Harry's mother.

"The ten guineas, added to the produce of Susan's labour—she had not slacked it a jot—had maintained the sickly woman through the winter; and, when there came to her a letter, one morning in July, in Harry's dear scrawl, posted from Portsmouth, she was half restored to health. He would be with them in a day or two, he said. The two

women listened in a feverish state of excitement for every knock at the green door. Next day a knock came: but it was not Harry—Susan again opened to George Swayne. He had brought their flower-bells back; and, apparently, handsomer than ever. He was very much abashed, and stammered something; and when he came in, he could find nothing to say. The handsome china vase, which he had substituted for the widow's flower-pot, said something, however, for him. The widow and her daughter greeted him with hearty smiles and thanks; but he had something else to do than to return them—something of which he seemed to be exceedingly ashamed. At last he did it. 'I mean no offence,' he said, 'but this is much more yours than mine.' He laid upon the table twenty guineas. They refused the money with surprise; Susan with eagerness. He told them his story; how the plant had saved him from the chance of being turned out of his home; how he was making money by the flower, and how fairly he considered half the profits to be due to its real owner. Thereupon the three became fast friends, and began to quarrel. While they were quarrelling there was a bouncing knock at the door. Mother and daughter hurried to the door; but Susan stood aside that Harry might go first into her mother's arms. "There's a fine chime of bells," said Harry, looking at his plant, after a few minutes. "Why it looks no handsomer in the West Indies.—But where ever did you get that splendid pot?"

"George was immediately introduced. The whole story was told, and Harry was made a referee upon the twenty-guinea question.

"God bless you, Mr. Swayne," said Harry, "keep that money if we are to be friends. Give us your hand, my boy; and mother, let us have something to eat." They made a little festival on that evening in the widow's house, and George thought more than ever of the chiming of the bells as Susan laid her needlework aside to bustle to and fro. Harry had tales to tell over his pipe; and I tell you what, Swayne," said he, "I'm glad you are the better for my love of rooting. If I warn't a sailor myself I'd be a gardener. I've a small cargo of roots and seeds in my box that I brought home for mother to try what she can do with." My opinion is that you're the man to turn 'em to account; and so, mate, you shall have 'em. If you get a lucky penny out of any one among 'em, you're welcome; for it's more than we can do."

"How these poor folk laboured to be liberal towards each other; how Harry amused himself on holidays before his next ship sailed with rake and spade about his friend's nursery; how George Swayne spent summer and autumn evenings in the little parlour; how there was really and truly a chime rung from Stepmother's steeple to give joy to a little needle woman's heart; how Susan Swayne became much rosier than Susan Ellis had been; how luxuriously George's bees were fed upon new dainties; how Flint and Gristone conveyed the nursery-ground to Mr. Swayne in freehold to him and his heirs for ever, in consideration of the whole purchase-money which Swayne had accumulated; how the old house was enlarged; how a year or two after that, Susan Swayne, the lesser, dug with a small wooden spade side by side with giant Uncle Harry; who was a man to find the centre of the earth under Swayne's garden when he came home ever and anon from beyond the sea, always with roots and seeds, his home being Swayne's nursery, and, finally, how happy and how populous a home the house in Swayne's nursery grew to be—these are results connecting pleasant thoughts with the true story of the earliest cultivation in this country of the flower known as the Fuchsia."

Few irremediable causes of premature decay actually exist in nature; the inconsiderate or wilful misuse of the very means of preserving health proving not unfrequently a cause of death. In these matters we partly depend upon our own conduct, whether as individuals, or socially, or as a nation.* Modern science and phi-

* Chlorine, the efficient disinfecting agent of chloride of zinc, is the acting principle also in chloride of sodium, or sea-salt, the typical purifier. The spread of cholera in the East Indies must have been greatly favoured by the laws which restrict the use of salt; possibly this may have been one exciting cause.

lanthropy can only point out similar means of safety to those originally enjoined on the Israelites, if to those precepts be added the duty of kindness to the poor, and that enlarged sphere of humanity which regards every man as our neighbour, there is absolutely nothing left to be added to what has been inculcated by the good physician. If men could but be induced to live as they ought to live (instead of doing what they ought not, and leaving undone what they ought to do), there seem grounds for concluding that the average term of human life might be greatly increased, and the amount of human suffering lessened. On this point there is a marvellous agreement between the abstract speculations of cool calculating rationalists, and the transcendental opinions of the religious.

We have already seen in the case of the Jews how beneficial has been the mere keeping clean the outside of the cup, so far as bodily health is concerned. In those worn-out Oriental countries, where a long course of misuse has rendered the banks of rivers, &c., deadly to the European constitution, a Hindoo or Mahometan population yet contrives to live with few hereditary ailments, retaining much patriarchal simplicity of manners, and most of the old ceremonial lustrations, though the spirituality which these once typified is rejected, and the moral and intellectual condition is deplorable enough.

The members of the Society of Friends are noted for their longevity; their general prosperity; and their puritanic adherence to Bible rules of life. The same may be affirmed of ministers of religion as a body. The old monks (considering the times in which they lived) were distinguished from those about them by a greater attention to religious duties; and also by their greater intellectual attainments, their more successful cultivation of the soil, and their consequent health and wealth. Their fall was a consequence of their misuse of these earthly blessings. They waxed fat, and kicked; as we are all too apt to do. Here has ever been and still is the great danger.

Contrasting the state of things in the North of Ireland with the poor Bible-less South (where a settler recently said, "If I could only make these men Mahometans it would be a step gained") we shall find physical destitution closely connected with religious destitution. This is not the place to enter on the old liberties of the Gallican, suffice it to say that the Bible is not forbidden in France. Cuvier was a Bible-society man. Well, in this country, and in France, people live one-fourth longer than in such places as dark Austria or sordid Russia. We have an unwilling evidence, in the profane sneers of the scoffer at the worldly success of saintly folk, that godliness is gain, even in this life.

Contemporary historians have chronicled violence, wars, frauds, persecutions, and the like, because they have been extraordinary exceptions to the even current of events, and have arrested attention at the time. The normal tendency of what is right, virtuous, true, and of good report to work its own reward, in every age has been unnoted, except incidentally. Modern research

has been more directed towards collating these scattered incidental allusions; and the result has been to give us quite a new notion of the every day life of times too hastily considered days of violence and blood only.

A gay Parisian about to settle in life, as we say, consulted a leading French doctor, having reason to dread hereditary consumption, a disease which carries off one-fourth of the people of Paris. "Never fear," was the reply, "spend six or eight months in the year in the country, and lead a patriarchal life when you are there."* This is the great secret. We cannot "lay in a stock of health" during a hurried excursion from one luxurious hotel to another. A lodging at a fashionable watering place is not much better. "Talk about *rus in urbe*," once observed a classical friend of ours, "I call this *urbe in rus*!" If the country is to restore us, we ought to catch somewhat of the sweet infection of its every-day life. A country cottage-home, the care of the domestic animals, the garden and kindred avocations, besides bringing us out to enjoy the fresh air, are of themselves eminently healthful. Besides, we contend that they afford the means of studying the very laws of life, just as comparative anatomy has elucidated the secret of the whole human frame. And we think they enable us the more aptly to comprehend the significance of many of the deep sayings of old.

We cannot accept without protest the dogma of the day—that civilized man should be perpetually inventing artificial wants to be the incentives and also the rewards for increased exertion. On the contrary, we believe that the many and distracting cares and pursuits of trade and commerce are, if not destructive, at least severely trying to the health of both body and mind.

The whole current of these remarks, together with certain speculations on the life of trees, have called to our mind the following magnificent passage from Louth's Isaiah, and it is peculiarly appropriate to the season, many happy returns of which we wish our readers.

"I will exult in Jerusalem and rejoice in my people,
And there shall not be heard any more therein
The voice of weeping and the voice of a distressful cry;
No more shall there be an infant shortlived,
Nor an old man who hath not fulfilled his days.
For he that dieth at an hundred years shall die [young],
And the sinner that dieth at an hundred years shall be accursed;
And they shall build houses and shall inhabit them,
And they shall plant vineyards, and shall eat the fruit thereof.
They shall not build and another inhabit,
They shall not plant and another eat.
For as the days of a tree shall be the days of my people,
And they shall wear out the works of their own hands.
My chosen shall not labour in vain,
Neither shall they generate a short lived race."

J. J.

A Metropolitan Poultry Show, at the Baker Street Bazaar, is announced for the 10th of January next, and the three following days. The prizes are liberal, and will, doubtless, invite competition, since no less a sum than £17 is allotted to Spanish, and £21 to Dorkings.

* The following singular authorities, among others, appear somewhat to favour this notion. Herodotus, on the Macrobian or long-lived Ethiopians—a dogma of the Etruscans quoted by Niebuhr; Louis Cornaro referred to by Abernethy; Clerk's (Fleury's) Ancient Israelites; Lingard on the Primitive Church at the destruction of Jerusalem, with a reference to these words, "the meek shall inherit the earth;" Dean Gravelly on the state of the Holy Land at its first colonization at the time of the Judges; Pictorial History of England on our own Saxon times; and lastly, Dr. Van Oven, Lee, Chadwick, to Dr. Cumming, and the Bishop of London.

For both these families a new class has been formed, namely, one for "*the best Cock (or Hen) of any age*," a wise step, wherever the funds may allow of it. At the end of Shanghaes we have Class 22 for "Brahma Pootras," so we apprehend that the framers of this list have satisfied their minds on a point on which our own are still in grave doubt. Game Fowls and Hamburgs are arranged as usual, but Polands are granted a fourth class for those of "*any other colour*" beyond the Gold, the Silver, and the White-crested Black.

Class 50 offers prizes "to the most useful cross-bred fowls," a novel feature in our principal Poultry Exhibitions, and which we should like to see accompanied by the warning, that such crosses must not be bred from, but devoted wholly to the kitchen. Geese have only an equal premium with each variety of Bantams, £1 10s. being all that is offered for them. They would have merited, we think, greater liberality, and the neighbourhood of London can produce specimens of the highest excellence.

The owners of Pigeons have great inducements laid before them; and "Rabbits" also are invited.

Prohibitory prices, we are glad to find, are here done away with; and "*not for sale*" may be affixed to pens with which the owners have no desire to part.

We are glad to find that the experience of the Secretaries, Messrs. Houghton and Catling, will secure to exhibitors that care and attention for their birds, without which great hazards must always be incurred.

We must not, however, refrain from the repetition of our strong reprehension of the Show being continued for four days. For a *whole week* must the birds be shut up in the pens, for they are to be in the Bazaar on one Saturday, and cannot be released until the Saturday following! If they have to travel from a distance they must be in their basket on the Friday previous, so that for nine days they must be in close confinement! Now, at Leeds, where there was similar imprisonment, we know of birds that arrived dead and dying—birds, too, that had taken first prizes!

We have been applied to for information as to who form the Committee of the Metropolitan Show, but we are not able to give such information. It would be satisfactory to the public if the names were published.

Neither does the disparity in the Prize List give general satisfaction, as the following letter testifies.

"As the organ of the Poultry Fanciers, I beg to draw your attention to the Prize List of the approaching Exhibition in Baker Street, and would, through the same medium, urge on breeders the propriety of withholding *all specimens* of the Poland, Hamburg, Game, and Bantam species, for which you will see that the prizes offered are little better than *one-third* of those for Spanish, Dorking, and Cochins. Promoters of these shows should bear in mind that they are rendered attractive to the public in proportion to the variety of the birds, and that although a Spanish breeder pays comparatively little attention to other breeds, it is not so with the mass of the visitors. The question is entirely in the hands of exhibitors, who have only to resolve to exhibit at no show in which the prizes are not equal for *all*.

"In this particular case I know one very successful exhibitor who will not have a single pen, although before seeing the list he had intended to send several. It is always an

expensive thing to exhibit, and persons ought not to be certain to make a loss even if they take a prize, which would be the case with Bantams coming from the country."

We regret to notice that the Prize List for the *Hereford Poultry Show* has followed the old error of saving their premiums by confounding distinct varieties of fowls in a single class. Thus, for instance, all the four kinds of Hamburgs compete together, and the same with Polands, Bantams, and Ducks. The principle is an erroneous one, unsatisfactory to the exhibitor and the public, while it imposes an unfair task on the judge. In the infancy of Poultry Societies such mistakes were unavoidable, but now it is far better to have no show whatever than to conduct it on a bad system.

FRUIT-CULTURE.

A FEW weeks since (page 180) my respected friend and coadjutor, Mr. Fish, took occasion to call attention to my practice in hardy fruit-culture, and introduced an extract from a letter which it appears had been written by some gentleman who had visited our gardens during the past fruit season, and who spoke in warm terms of his impressions concerning the fruits. I cannot imagine who the gentleman may be, but I hereby tender him my best thanks for his good wishes both to myself and fruit-culture, and also for affording me an opportunity of occasionally bringing the matter before our readers, although to some it may appear a thrice-told tale. It somehow happens that even the most self-evident truths require to be repeated, again and again, before they can attract sufficient attention, or leave that impress in the human mind which shall bring forth fruit, or, in other words, cause the reader not only to think but to act.

In my practice there are no secrets. I am not particularly partial to mysteries, and, indeed, if I were, I do not think that I could manufacture them out of such materials. Simplicity is the basis; for I have long held the opinion that in fruit-culture any roundabout plan, involving, of course, much expense, is unworthy of consideration. Plans, systems, call them what we will, may be ingenious, may be illustrative; but, to be generally useful to a utilitarian public, they *must* possess two other qualifications—they must be economic, and afford every possible chance of success. They should, moreover, possess so much simplicity in carrying out, that any thinking person, although unacquainted with gardening matters, might carry them out without difficulty.

The fact is, that the question of fruit-culture was fairly overlaid, a score or two years since, by systems of pruning. So elaborate had they become, and withal looked so charming on paper, that folks had almost forgotten that fruit-trees have roots which will as little bear to be treated with indifference as the branches.

I do not here intend to attempt a settlement of the long-pending quarrel between the Messrs. Prune-all and Prune-none, as these fierce belligerents have opened the question entirely in their own way. I, for one, am content to let them settle it in like manner; I advocate common-sense pruning.

It is now some twenty-four years since my attention became strongly attracted towards the question of fruit-tree culture. Having been born and bred in a nursery containing twenty-four acres, and in which quantities of fruit-trees were grown, I had every opportunity of witnessing, during my early days, the various "rule-of-thumb" processes considered requisite by the knowing ones of those times. Physiological enquiries concerning the functions of plants, trees, &c., were confined to a very limited sphere of operation; and, indeed, if any

one in those days had held such dreamings, he would have found it particularly expedient to keep them almost hermetically sealed, for it would have been excessively prejudicial to his reputation amongst "sound men" to broach such gimerack notions. I well remember a very ingenious gentleman, who had been studying Sir J. Sinclair, coming frequently to the said nursery to chat a little time away with the ground foreman, his conversation generally smacking of chemistry. He was attempting to get old John to classify soils; but not so. John, although apparently very attentive at the time, always persisted in calling him "Dr. Calcareous" behind his back—this term being the only one John could remember out of the whole vocabulary.

However, I must back to my subject. Twenty years ago, and more, then, having been drawn somewhat closely to a consideration of the hows and whys of fruit-culture, I could not help being struck with the fact that our ordinary fruits were not unfrequently more fruitful in the hands of the cottager, or in a state of nature, than in the pampered condition in which we might see them in the kitchen-gardens of the noble and the affluent, with all the paraphernalia of highly-wrought borders, and other expensive affairs. In those days I could never pass an old orchard Pear-tree, of perhaps a century's standing, or more, without reflecting how it came to pass that such trees should bear so heavily without the pruner's aid. In the garden case, I saw that the general character of the young wood was totally different; rambling trees, with coarse breast-wood, appearing as though they were cultivated for the sake of their spray; in the natural case—or accidental, if you will—the trees producing some three or four inches only of young shoot annually, and that, too, chiefly at the terminal points. Old Thorns, too, Hollies, and I can scarcely say what, all seemed to point to some great fact, and one which I was exceedingly desirous to ascertain. I felt persuaded that, say what people would about this and that tree being tender and requiring coaxing, there was some radical mistake in the culture, and that all the arguments which had been used to justify usages were fallacious, and merely meant to hide what could not be explained in a satisfactory way. I felt assured, betimes, of one thing, that no system of pruning could ever prove satisfactory in itself, whatever might be its merits, unless accompanied by certain root conditions of even greater import.

Knowing, of course, that all old kitchen-gardens were rich in decayed vegetable matter, even to repletion; knowing, also, that gardeners, in general, were compelled to crop such soils as close as the line could be drawn; and that in so doing, coupled with a constant necessity for manuring on behalf of vegetable culture, I felt assured that gardeners in general had been invigled into a species of self-deception; and that when their fruits failed, although their Cauliflowers and Celery succeeded, that they were forced to cover their retreat by making all look nice on the wall, or by neat pruning systems.

And not only the wall borders, but those of the open kitchen-garden partook of the same character, as well they might. These things, I say, then, led me at once to the conclusion, that an unworthy compromise had been made, and that these practices were fundamentally wrong; and that the question of fruit-culture required to be considered in itself, totally apart from vegetable culture; for I felt persuaded, that so long as the two cases were kept in a mixed condition, so long would erroneous practices prevail.

The question being thus shorn of its extra appurtenances stood on its own foundation; and the mind thus unfettered (in other cases than Pears or Cabbages) begins to think anew on the subject; or, in other words, approaches the case with less prejudice.

And now arose, in my mind, the idea of attempting to

realise by art what was found desirable in trees under natural conditions. Let us take a subject by way of illustration. Here is an old Thorn-tree which has stood for a series of years; we have seldom known it fail of a crop of haws. Beside it is a recently-planted quickset hedge, every plant in which claims to be a relative of yon old Thorn-tree. But these rogueish young Thorns do not bear berries! The soil is good, and they have been regularly clipped, whilst the old Thorn has been neglected: it needs no shears. Now, I know, of course, that a Thorn is not a Pear; but I do know, also, that in the eyes of first-rate men, who combine science with practice, it will furnish as apt an illustration as they would desire.

Admitting this for the sake of argument, the ingenious young reader will naturally ask, what then can be done to make these young Thorns hasten their bearing? I will tell you, my young friends. Stay your hand with the shears, and apply the same amount of cutting-off to the root; but, nevertheless, thin out the branches instead of dubbing them; for even a Thorn-tree requires a certain amount of light during an English summer, to enable it to mature blossom for the next year.

To return from this digression;—I found that three-parts of the fruit-trees in our gardens were in a similar condition to the young Thorns in the hedge, and that no system of pruning could alone place these trees in a fruit-bearing condition. It appeared evident that the root was too active, or too highly fed for the exceedingly limited amount of branches and foliage; and that in such cases, either the branches must be allowed to develop themselves with more freedom, or the supplies must be, in part, cut away. This led, of course, to root-pruning, which I have, indeed, practised for twenty-four years, although it is the fashion with some to make a fuss about it now, as if it were a tolerably fresh idea.

But this root-pruning, although a preventive measure, requires to be repeated in many cases; and it occurred to me that something of a more remedial character might be adopted. Hence the idea of *Stations* occurred; or, in other words, the so placing a tree, as that its roots could, at any time, be placed in a completely isolated position, and its supplies of food apportioned to its real needs with the utmost precision. Those who are interested in this part of the question will find that this view of affairs originated entirely with myself; but the first time I made them public, I believe, was in "Maund's Botanist and Fruitist," about a dozen years since.

As years have rolled on, I have had ample opportunities of testing the soundness of these views; and I speak *emphatically*, albeit, such must of necessity appear somewhat egotistic; however, there is little use in mincing over the matter; and I will endeavour occasionally to show our young readers how to proceed in such affairs.

Could I long since have fully carried out my views in hardy fruit-culture, I think I could have shown such a case in practice by this time as would have settled the question; and, as it is, our success has certainly been very great, especially in seasons notorious for failures, and that, too, in places considered models in the world of gardening. Our Pears were, indeed, worth looking at; and as for out-door Peaches, as I have said before, we have not missed a full crop for years; but we have no heated walls.

The worst question we country gardeners have to deal with is that of economising labour so as to meet all demands; this is by far more difficult than anything in the nature of gardening; so the world must not judge us as we are entirely, but as we hope to be.

R. ERRINGTON.

PRUNING.

An intimate friend of mine was once engaging himself to a great country gentleman; and when he told me about the bargain they made, and the conversation that passed between them at the time, I was so struck with one of the qualifications which the gentleman hoped his new gardener would have, in the absence of another qualification, on which he did not seem to put much stress, that I shall never forget it. "I know your character stands high, and you have the credit of being what is called a scientific gardener; but, for my own part, I do not much value that quality; it is apt to make some men think more of themselves than they ought to do; and, besides, if I can get plenty of flowers and fruit all the year round, and the place is kept as I wish it, I think we could dispense with science, thus far in the country, or, at least, we need not put much stress on it." Another gentleman, who reads *THE COTTAGE GARDENER*, made another remark, in a letter to myself, sixteen years since, which I shall never forget. "Not only a gardener, but every cook and groom, ought to know, or be informed in the science which bears on their departments, before they are admitted into large establishments, where the health of the family and most valuable property are entrusted to their care." I quite agreed with this correspondent, although, previously, I did not look upon cooking and grooming in that light; for I was a man-cook in three establishments, without considering that it was necessary to catch a hare before cooking it; and I could ride the wild-cat colt up or down a steep *brae*, or plunge into the stream without a saddle, and swim across, without being aware that any science at all was necessary in the matter; but I never yet believed that a man ought to be allowed to prune a gooseberry bush until such time as he could give a good sound reason for every cut he made; and if he could do that, I would call it scientific indeed, although he might call it only practical knowledge—sound practical knowledge being the only sure foundation for practical science, after all.

If you stand before a young tree, not higher than your head, and see one or more of the side-branches so much stronger than the rest, with their ends more upright—showing plainly that they, too, would be leaders in time, as much so as the centre and true leader—science teaches that if the top, or tops, are merely cut off or stopped, the ascending force is divided, and the leading character is lost, from that hour, to those shoots. But science may be at fault for all that; and practice alone must guide the pruner as to which of four buds to cut to. If you take the point of a shoot, and bend it to you, there are eyes, or buds, on the upper side of it, also on the under side, and on the right and left sides as well. Now, the question is, to which of these buds is the shoot to be cut to; and to that science cannot direct you, at least not to three of them, science being based on fundamental rules. If you understand it, you will never cut a side-branch, in any tree or bush, to a bud directly on the upper side of it; because it is natural, or fundamental, that the top bud left on the upper side will either take the lead, or, by growing inwards, crowd the distance between it and the stem or trunk of the tree. A pruner may work to get more flowers, more fruit, or timber, or he may only want a more regular disposition of the branches; but none of these can be had by crowding them: still there are three more chances in the three buds left out of the four; but as science does not go by chance, it cannot tell which of the three buds is the right one to cut to. If you cut to a bud on the under-side of the shoot, that bud will make a shoot that will grow outwards; and if there is room in that direction, that is the best way for it to grow: but, suppose there is another shoot which

occupies, or which will soon occupy, that space, then your causing a new one to grow in that direction will crowd that part; therefore, cutting to an under-side bud, in such a case, is manifestly wrong.

Let us now take a bud on the left side of the shoot, and cut to it. This also may be right or wrong, as it happens. A leader rising from the left side of a shoot will grow more to the left than the shoot itself would do were it not stopped; and if that left side is already better furnished than the right side, there will be more crowding than needs be; and it is just the same on the right side of the branch. Here, then, we have got science and practice just matched, the one helping the other in equal proportions, or "value for value," as the greedy hypocrite said, when he gave away his cuttings, with the only view of doubling his own collection.

This teaches us to stop an aspiring leader to lessen its force in that direction; never to stop it to a bud on the upper side of it, and to be guided to the right bud to cut to by the rest of the branches; choosing the bud on that side where they are less crowded, and so, by directing a new growth to the more open part of the head, balancing the whole more equally.

I put the question, which is the root and foundation of all pruning on this footing, because, in nine cases out of ten, in general pruning, it stands just as here set forth; though never, or but in very rare cases, in pruning a forest or timber tree; for exceptions, take a pillar rose? If one of them, or one out of every hundred of them, were to be led up with one central stem, like a forest tree, the chances are that it would get bare at the bottom, some time or other; and if it did, there is no other shoot to fall back upon, or rather to cut back to furnish the feathers to the ground; therefore, the safest plan is to have two, three, or more leaders, for the centre of a *pillar-rose*, and, in pruning the side-branches from them, we meet with exceptional cases to that of not pruning back to a bud on the upper side of a timber tree. We want the pillar to rise as fast as practicable, after furnishing side-branches enough to form the body; and if we always avoided the cut to an opposite bud, we might have more for the body of the pillar than was really necessary, and not enough of upright growth to carry on the height in proportion. In such cases, if we are sure of sufficient side-branches, it is always best to cut back to a bud on the upper side of all the topmost branches. On the other hand, if we take the care of *fruit-trees trained* against something, or of flowering plants merely, trained the same way, and find that the young wood from the main branches is too strong for our purpose, we prune back to a bud on the under side of the shoot, because a shoot from such under bud is never so strong as one from the upper side.

Such, then, I conceive to be the rudiment or first principles of pruning. The very first move in the process is merely to squeeze the leading bud on a twig or branch between the finger and thumb, without an external wound, the soft parts inside the bud being only affected by the squeeze so much as to hinder the growth in that direction. The second step removes the bud altogether, and the third involves the cutting off of a portion of the wood as well—the practical eye directing the hand to where and to what extent the removal is to be made, and that the quantity to be cut off, and the bud at which we must stop, must necessarily vary on the same branch, according to the purpose intended by the pruner. Another maxim is this—pruning will add very much to the size and weight of a great variety of fruit, by confining the energies of the parts next to the fruit, for that very purpose, instead of being expended in making more wood; but all the pruning we can do, except in very rare cases indeed, will not add one inch, or one ounce, to the size or weight of a tree, although more than half the pruners in the world believe to the

contrary. Why, then, should timber trees be pruned at all? Mr. Appleby will tell us why when he comes to that part of his instructions to the royal forest commissioners; and here I shall confine my observations to the effects that may be produced by pruning the large outside trees along the boundary of villa gardens—trees, indeed, that have been, for ages, much worse managed than all the trees in all the forests in the country have been, in this age more particularly; and they say that is bad enough.

The next step in pruning, after stopping buds and aspiring leaders, is a process which every gardener and forester puts in practice every season, and, curiously enough, no one has ever yet thought proper to explain it in print, as far as my reading goes. Take up any book or essay on foresting, and you will find the first step in pruning recommends that aspiring leaders be stopped; and the second rule to prune off the lowest tier of branches, after a certain age, and before the branches are more than one inch in diameter; but there is a step between the two which is never omitted in practice—it is so difficult, however, to explain it by the pen, that all writers pass it by, or take it for granted that any one who is competent to prune at all must know of it without being told. Let us suppose a common case, however: A young, healthy tree, six or seven feet high, is removed from the nursery, and is planted along the boundary line of a villa garden, where it is intended for a screen more than for its timber; and let us say that the first three feet of it from the ground is without any branches, then a thick head of branches, with all the big ones about the same size, and none of them seeming to vie with the leader, which is freely setting off in the middle without a rival—just such a tree as one would select out of a whole nursery row. When this tree begins to make a free growth after planting, the pruner comes round in the winter to see that all is right; he finds no necessity for the first step in pruning in this tree—namely, to stop a too forward branch—for there is none of that class; then, if he is not a practical hand at the knife he will do just what the book tells him—misses the second step altogether, and takes off the lowest tier of branches, which is the third step. Here he would be wrong in two ways: first, he is not pruning for getting clean, straight timber, therefore, there is no need of depriving his tree of its lowest branches; and secondly, he will need them all by-and-by for screening the garden. The common lot of all planting for screens is, the plants are set too thick, and the one soon spoils the other by over-shading, and all get bare at the bottom as fast as the tops rise, and so on they go till you see right through them, and then the usual means of hiding the boundary a second time with evergreens is had recourse to. Now, what is right of pruning boundary trees is right about planting them; they ought to be planted rather thinner, or wider apart, in the first instance, and in pruning them the branches ought to be *thinned* when they grow close together, so as to keep the one from shading the other, that all may live for a long time, and form a perfect screen; taking off the lowest tier is of little use, and may do harm, by depriving you of the number of screens; it is the *equal distribution* of the branches all over the tree that is required, and our young tree from the nursery, with a fine head of branches, has now arrived at that stage when the growth of these branches causes them to be too close together, and they ought to be thinned as surely as a young forest plantation should be, or any other plantation that was planted thick at first; the practiced eye would see this at once, but the most practical pen could not say at a distance which of the branches or how many of them ought to be cut off, so as that the head should not be crowded for another year; then it follows that the second step in pruning should be

to see that the branches are not crowded in any part of the head; and the third step, that of cutting away the lowest tier should never be taken until the second step, that of thinning the head, was accomplished; therefore, when we know that too much pruning at one time hurts a tree, if the necessary thinning happens to require more than the value of two bottom tiers to be removed, the third step should not take place at all that season. A tree taken thus early should be so managed, to the last day of its life, as that no branch need be cut from the main trunk of more than one inch in diameter. A wound made by such a cut will be healed over by new wood the first season, and leave no blemish in the wood. I never yet spoke to a man about the necessity of stopping a branch that was stronger than its fellows, who could not understand the reason in one minute. We all agree that there must be a leader in parties, creeds, and kingdoms, as well as in trees; and when another tries to get the upper hand things go wrong and out of joint, and we stop him; but there is not one in ten who understands the reason for thinning the head of a tree before the pruning for straight timber begins. It is not every one who knows the use and value of leaves that can understand how it is that leaves can be useless, or injurious; but they can be both; part of the things which go to make timber, or fruit, go also to make leaves; but unless leaves are allowed full exposure to the light they are of no use to the tree; and what goes to make an useless leaf is an useless expenditure, and therefore an injury so far. So much for the first three steps in pruning, and now to conclude—Who will take me to task about saying that pruning does not “add an inch or an ounce” to the length or weight of a timber tree? Here is a fine chance for some of our young readers, in one of the easiest and simplest kind of writing, namely, hard criticism; the harder the better, if it is courteous. D. BEATON.

DISAPPOINTMENTS IN WINDOW-GARDENING.

“OUR window is all our domain; no *terra firma* belongs to us, unless that which is situated there, but the small quantity of earth contained in boxes and flower-pots is as dear to us as the soil in the boots of the Barons of olden time, when at the coronation of a king they could severally boast that each rendered homage standing upon his own soil; and yet how careless you are of us, never telling us *when* the frost would come, or giving us full information, except in far back volumes, how to act. And there now, my soil in pots is pressed hard as a brick; and the plants on which I took so much pains are past redemption. Alack a day! what shall I do?” In a market town, where there are some nice little gardens, where the windows during the spring and summer months are well stocked with flowering-plants, and this holding good, not only as respects the middle classes, but applying equally to the homes of the mechanics, and not a few of the more unskilled labourers; a nurseryman told me—and his manner betokened that he had not a spark of a notion that ever I put words on paper—“these scribbling fellows that let out all the secrets about this plant and that plant are really the best friends to us; for do you see, they make such commonish things look so grand, that ladies ask their gardeners if they have got such a thing, and forthwith we get an order; and others, who have a man so many days a-week, resolve upon being economical, because these writing men tell them how easily such and such things can be kept over the winter, and they propagate wholesale, and give a good order for pots, and all goes merry as a marriage bell, until some day or night, when the good jobbing-man, who could

not be in two places at once, is out of the way, the plants are freezed, and as they will not be beat, I have, in all such cases of ordering of pots in autumn, felt half assured of receiving an order for plants in spring, and then, Sir, almost all our better-to-do sort of people, who make a pride of keeping their plants in windows over the season, meet with so many accidents, from a little want of thought and attention at the right time, that they readily give us a sum for a few nice plants, which they would not be inclined to do had they not known something practically of the labour and attention that were requisite to keep the plants healthy.” Now, if our friend has no other resources, we think we can here point to one remedy for his grievance, namely—the nearest respectable nurseryman.

A learned man we lately heard preach, said—“If you ask me what the morrow will be at this time, I reply, I do not know; wait till then, and I will tell you.” Now, to some extent, the same answer applies to our friend, as to telling him what the weather should be in our uncertain climate. We can only give general rules in such matters. The reducing of a general principle to particular cases must be left entirely to the judgment and forethought of the parties concerned. We can never supply mere continued observation, and the deducing of inferences from it, as to what the weather will be. Without, however, *waiting*, like the learned Doctor, we can, from certain circumstances, such as the direction of the wind, the absence or presence of clouds, the state of the thermometer and barometer, judge pretty accurately what the weather is likely to be for short intervals of time. For instance, last Monday evening, though it was freezing fast, I predicted, from the presence of large fleecy clouds, that it would be milder before morning; and the following morning and day were, for the season, rather warm. These matters, however, were entered into rather fully some time ago. They are worthy of the study, not merely of our friends the amateurs, but, in these economical days of the practical gardener. Just think how much might be saved in fuel did the furnace-man keep his eye on the sky, the wind, and the thermometer in the shade alone: there would be less irregularity in houses, less overheating of them, less waste of fuel, by sending in dampers and opening the furnace doors that the valuable heat may be spent on the external air, because it would be injurious to admit it into the house. I passed such a furnace at night not so long ago, and the able gardener, under whose superintendence the place was, said nothing could be more vexing, as the waste thus occasioned, in districts where coal had to be driven long distances. He added, “I have more bother with this than anything else.” A young gardener once showed me a letter he intended sending to a periodical, showing the importance of noting the outside thermometer in the management of houses; and I said, “It is very well, but surely such an article could not be needed—I myself had been so accustomed, when a furnace-man, to look to the glass before I went into a house, or touched a fire.” He assured me that in a large establishment he never saw it done; and I can partly believe it, as I have long found that in the case of young men attending houses it requires some scores of questions as to the condition of the outside thermometer in a winter’s evening, before any other answer can be got than “I don’t know,” or “I forgot to look.” Now, in these competing days it requires no prophecy to foretel that such easy-going unobservant persons stand a good chance not to be looked at but forgotten.

“I have had a handsome bow sash made for my window, retaining the common sash as before, there being nothing different from a window with double sashes, farther than that the outside one projected more than ordinary, and in the space between I have kept my

plants well, being able to give them air, &c., when it might not be desirable to air the room; but now you have got me nearly into a scrape; for relying on what you said, as to the non-conducting properties of confined air, I did not move the plants in these cold nights, and notwithstanding there had been a fire in the room, some of the foliage was slightly injured." There is such a thing as carrying a principle to an extreme. A *good* non-conductor of heat, and a *perfect* one, are very different things. I never asked for confined air, what its proprietors propound for *frigidomo*, namely, that beneath it there would be no change of temperature. I can believe it to be a capital protecting material, although several folds of it would not secure what it pretends to do in a cold night. If confined air was *altogether* impervious to heat, then the warmth of your room would have as little effect on the one side as the frost without on the other. Bounded on each side by a wall of glass, a substance easily affected by changes of temperature, the air next to the glass would be affected by the heat on the one side and the cold on the other. But in proportion to the complete isolation of the enclosed air would be the obstacle to the uniform temperature within, by the free passage of heat on the one side, and of cold on the other. I can conceive it very possible that three distinct temperatures may exist in such an enclosed space, and that therefore leaves six inches from the glass might be frozen, while those double that distance would be safe. Besides, let it not be forgotten, that every hole and cranny are so many means for setting the air in motion, destroying its isolation, and making it a conductor instead of a non-conductor.

Even with such holes, an advantage is so far gained, because free radiation is intercepted. For example, the best security we could give to a sash over a cold frame, or pot, from frost, would be the covering it with an opaque substance that could neither be easily heated nor cooled, raising that covering several inches above the glass, and then securing it all round the sides and ends, so that air shall not easily come out or go in. We thus alike prevent the radiation and conduction of heat. But suppose we place such a covering over a sash, and leave the sides and ends open, we certainly so far prevent the free radiation of heat, but we allow the rather free egress and ingress of air to conduct it away. Hence, in cases where close shutters outside would be undesirable in the coldest nights, the plants should be moved from the outside glass; in very cold weather they should be taken into the room altogether; and in cases where double sashes are not used, the plants, as often advised, should be placed in the middle of the room at night.

I have been told of several very successful adaptations of this double or bow window style, so as to resemble a miniature greenhouse, and I have no doubt they will become more general, as they are really more interesting than the pretty toys of Ward's cases, just on the principle, that three-parts of the pleasure to be derived from plants consist in the being able to attend to and supply their many wants. Picture to yourselves such an enclosed space, say from eighteen inches to three feet in width, see it arranged with little baskets and vases, and stands filled with flowering-plants, with openings in the external sash, so that in suitable weather you may give air, water, wash, syringe, &c., without making, what the ladies are apt to call, a *mess* in the parlour, unless their own hands should have wielded the water-pail, &c., and then it is all right. Think of the ability to give these plants air, &c., when you could not make the slightest draught from the window into the room; on account of the dear invalid reclining on the sofa, and the *thanks* that dear friend would *look* far more heart-reaching than the balmiest

words, when, after the room was all comfortable, the plants washed so as to be as fresh as a daisy after a shower, you shut up your external ventilators, throw up the sash of your inside windows, and, amid beauty and odours, causing the mind of your friend to forget the distress of the present amidst the flowery recollections of the past, and the more than sunny hopes of the future. And for such a delight to others even, let alone the pleasure to ourselves, would not the trouble and the care sink into insignificance? You say, that if you had fixed stages, baskets, &c., in such a place, that there would be an annoyance in getting them into the room in frosty nights and days, however beautiful the sight might be in summer. Well, let them alone where they are. Procure a waterproofed cloth so as to cover the outside of the window, well padded, and large enough to be fixed securely at the sides. In cold nights, and even days, admit a little air from the room among the plants, and when very severe, place a gallon stone-bottle, filled with hot water, in the miniature greenhouse before retiring to rest.

I believe, that in the case of all who can afford the comfort of the real luxury of having a cool room in summer and a warm one in winter, that double windows will become a sort of necessary, even when plants are not cultivated between them. Air may then be given at pleasure, and yet the counter-action to a free radiation and diffusion of heat will serve to maintain a more equable temperature within. As a medium for plant growing, I think, that under various modifications, the idea is destined to be a popular one. Many think plants *unhealthy* in rooms, as giving out deleterious gases by night and in dark evenings. Unless, in the case where odours, pleasant or otherwise, are very powerful, I think too much stress has been laid upon this, but all agree, that whatever be the influence of vegetation during the night, it does, while healthy and clean, improve and purify our atmosphere during the day. These double cases would allow the needlessly timid to shut out the deleterious gases and exhalations, when dark, either in a bed-room or sitting room, while they could enjoy their exhilarating influence during the day.

With pleasure I notice that this idea is to form a prominent one in the government rules for the new cemeteries. Whatever the inside arrangement, it is to be imperative the surrounding of it with a belt of vegetation of trees and shrubs; not so much for shade and beauty as for neutralising the exhalations from decomposing matter, and thus so far afford a healthy atmosphere. Government here is following out, at however humble a distance, the teachings of the noblest of all philosophy, be it reverently spoken, the example of the Great Architect of Nature himself. Before animals could poison the air with their breath and decomposition the counterpoison had already been prepared. Vegetation had spread its verdant mantle over our earth, and the sunbeam had played upon its foliage, thus eliciting pure oxygenated, inspiring, vital air, before present animal forms had been called to take their position in this beautiful world.

R. FISH.

THE IRIS.

(Continued from page 242.)

IRIS SUSIANA (The Shusan Iris).—This, though one of medium stature, has an uncommonly large flower, and on account of its singularly-blended colours is exceedingly interesting and quite a striking beauty. It is, however, not generally grown, but certainly deserves to be, because its flowers are so large and finely-coloured in streaks of rich purple. It is not strictly a bulb, but has a fleshy, roundish kind of root-stalk. I

had a lot of it from Holland this season, and they came over quite safe, were potted immediately, and are now growing well.

The soil this species requires is a rather strong one; that is, a compost of three-parts good loam, such as an old pasture will afford, one-part well decomposed hotbed manure, or the horse-droppings from off our public highways. If the former manure is used, then add a good addition of sand; the latter will, perhaps, not require it, because sand, or, at least, grated stone, will generally be scraped up with the dung. In this material I find them to grow very satisfactorily. The *Shusan Iris* is nearly hardy in the south of England, but is apt to go off with the damp weather of autumn; therefore it is safer always to keep a few in pots, sheltered through winter in a cold frame or pit.

At Messrs. Henderson's, of Pine-Apple-Place, it is kept plunged in a pit, which pit is simply protected with mats thrown over a frame-work made of iron rods length ways, and bent over in half-circles at about seven feet apart across the pit or bed. It is one of the neatest habitations for half-hardy bulbous plants I know of anywhere. It is a winter habitation for rarer kinds of Squill (*Scilla*), for the *Bulbocodium vernum*, for the *Cyclobotras*, *Rigidellas*, and other rare, scarce, half-hardy, and difficult-to-do-well bulbs. The pit is simply a parallelogram formed by building two walls four feet apart, about one-and-a-half feet high, with cross walls at each end. It is filled with brick rubble to within six inches of the top, and that space is filled with ashes, in which the pots are plunged up to the rim; then on the top of the bricks is placed a long piece of timber, about the size of a brick in the square. Into this sill the iron hoops are fixed, thus rendering all firm and substantial. It has been in use, to my knowledge, for more than ten years, and is apparently quite as perfect now as the day it was built and finished. An additional shelter is given to it by a thick, four-feet high, Yew hedge on the north side. So convinced am I of the excellence of this hybernaculum, that I shall put one up for my own use. I am certain it would be an excellent place for many things that are now damping off in close pits or frames; such, for instance, as Verbenas and shrubby Calceolarias, plants that invariably suffer more, or rather perish more, from damp than the severest cold. In such an airy pit damp would vanish every fine day, and frost might be kept out, or from the plants, by coverings of non-conducting materials, such as that called *frigidomo*, which I have seen in use at Dyrham Park, near Barnet, and which the excellent and scientific gardener, Mr. O. Thomson, assured me was the best covering material either for shade or shelter of which he had ever had experience.

This is a digression in favour of a pit, or rather, perhaps, it might be termed a raised and sheltered bed, which I am sure the readers of THE COTTAGE GARDENER will excuse, nay, many of them will be glad of the information how to form such a place. Whoever visits the Pine-Apple Nursery should request to be shown this raised bed in which are grown the rarer bulbs in pots. Its neatness and efficiency would be sure to gratify the visitor. The only fault I could ever find about it was the hedge being a little too near it, so that there is scarcely room to creep along between the pit and the hedge.

After the winter season is over, this beautiful Iris may then be planted out to bloom, and taken up again in the autumn. It is easily propagated by division. On each side of the fleshy root-stock there springs forth shoots; these gradually elongate till they have a root-stock belonging to each. This young root-stock will form roots, and then it may be safely divided off the parent plant, potted in a proportionate sized pot, and placed in a shady place till fresh roots are emitted, and the plant is fairly esta-

blished; afterwards give it a second potting, and then it may be treated like the old plants. The species also produces seeds, and may be increased by them as a matter of course; but hitherto there has been no disposition to (as florists term it) sport. All the seedlings have come exactly like the parents. Whether a Beaton, or a Leeds, could, by hybridizing, produce such a result, I must leave to them; the flower is really such a fine one that it seems almost impossible to improve it.

One point in its culture I must not forget. If a plant has become old, and branchy, and weak, then it will be advisable to break it up entirely, make of it as many as possible, and commence afresh. T. APPLEY.

(To be continued.)

ENVILLE PARK,

THE SEAT OF THE EARL OF STAMFORD AND WARRINGTON.

WHEREVER there are improvements taking place, or going on, I am pretty certain to hear of them, and quite as certain to go and see them, and also to take notes; and, as Burns says, "I' faith to prent them." A very good and entertaining book might be written on the progress of gardening, and we should find, that in proportion as the taste for gardening increases or wanes, so will the taste for all that is good or lovely in the moral world increase or wane also. Great Britain stands, perhaps, the highest of any nation or kingdom, ancient or modern, as a gardening people; and I need not insist upon the moral and intellectual superiority of her people. Long may gardening flourish among us, especially the ornamental part of it; for I say, increase the love of flowers, and the lovely part of the human character will be developed in proportion.

Enville is quite a household word among Pine-growers. It was here that the kind known as the *Enville* was either raised from seed, or first fruited, and hence took its name.

The place is situated about five miles from Stourbridge, a town famous for the manufacture of glass, and the boundary on that side of the *black country*. I was staying, about a month ago, a few days with my esteemed friend, Mr. Catling, curator of the Birmingham Botanic Gardens, and whilst there, I heard that Lord Stamford was making great improvements in his gardens. That news induced me to start forth on a journey of discovery through what is called "the black country." Whoever has read the beautiful story of Nell and her Grandfather, in Dickens "Old Curiosity Shop," will remember his vivid description of this country. It commences as soon as the passenger leaves the noble station of the London and North Western Railway, in New Street, Birmingham, and stretches, without any relief, to Stourbridge. A bleak, barren, desolate, and black, smoky district, with scarcely a tree, or a hedge, or a green field to relieve the eye. Even the cottage gardens, where there are any, are barren; or, if there are a few hardy Scotch Kale plants to be seen, they are so dark coloured that the mind is distressed with the idea of having them cooked to eat. Thanks, however, to the steam and iron way, I was quickly conveyed over it, and as soon as I passed over the line of hills just beyond Stourbridge I entered into as pleasant a country as can be found anywhere in Britain.

I cheerfully pursued my way on foot, for there is no public conveyance that way, till the towers of Enville appeared in view. Every step told me that improvement was the order of the day. The hills are covered with young thriving plantations, in which the Larch appeared to preponderate greatly, though I could detect a mixture of the sturdy Oak, the graceful Ash, and the slender Birch amongst them. Doubtless the Oak is intended to be chief when the rest are thinned out. Many of these young plantations are now just at the

stage when the thinning process should be commenced. The branches are beginning to interlace, and a drawing up will take place if they are neglected even two years longer.

As I drew nearer the mansion, I observed to the right a long length of new lofty brick walls; these I found were the boundary of a large new kitchen and fruit gardens, on the south side of which is a large congregation of glass houses, nearly all in an unfinished state. Long ranges of pits are in front, and these were filled with the healthiest bedding-out plants I have seen this many a year. In one large pit there were some good healthy Pines, and in another some good Strawberry plants preparing for forcing. All, however, is in an unfinished state, but progressing surely though slowly. From this kitchen garden we, that is, the gardener, Mr. Aiton, a descendant of one of the royal gardeners of that ilk, and myself, wended our way up a rising ground to the plant-houses or conservatories. These were well filled with good, healthy plants, but they are too small and too fanciful for the place. They are to be taken down, and a much more extensive and noble range put up. I saw the stakes put down for the foundations.

The pleasure grounds are very extensive, occupying a rising ground to the north of the house. They were formed about five years ago, and it is remarkable how the Rhododendrons thrive in the soil—a kind of red clay. To look at it, I should have thought they would not have existed a single summer, but they have grown well, and are of a deep green, and well set with buds. As this pleasure ground is so extensive, advantage has been taken of that circumstance to plant a considerable number of the choicest Coniferæ. I noticed the following: *Picea nobilis*, 9 feet, a handsome specimen; *P. Webbiana*, well-formed and uninjured; *Pinus patula*, a little injured; *P. macrocarpa*, a splendid specimen, 35 feet high, with a stem three feet round; *P. excelsa*, a dark green, densely branched variety; *P. ayacahuite*, 6 feet, uninjured; *Taxodium distichum*, a fine tree, 45 feet high, and 4 feet round the stem; *Abies Brononii*, quite hardy here, uninjured for four years; *Abies Douglasii*, growing rapidly; *Cupressus torulosa*, quite hardy; *C. thurifera*, much injured; *Cedrus Deodara*, many plants, growing rapidly. The Deciduous trees here are very remarkable. I do not suppose there are any such in the kingdom. They have been planted in groups of seven or nine, and the branches have spread along and over the ground to a very great extent. I think I speak within bounds when I say the branches cover a space 100 yards in diameter. Of course, they were out of leaf when I saw them; but when in full foliage they must make a grand appearance. In the pleasure grounds there are an upper and a lower lake of water. Jets are being put in, and will be very effective, no doubt, when finished.

Such is my very brief account of a nobleman's seat that is in a state of improvement. Visitors need not go through the dismal country. I did to appreciate its beauty by contrast; for there is now a railway opened from Oxford, and from that point I would advise any inhabitant of the south, desirous of seeing a fine place, to start from. Oxford, of course, can be reached easily enough from any part of the kingdom. The station for Enville is Stourbridge. In three or four years, if it goes on prosperously, this will be quite a lion in gardening.

T. APPLEBY.

ON KEEPING ICE.

THE arrival of winter brings with it duties peculiarly its own, and some of which, if not performed at the identical time they ought to be done, cannot be done at

all during the season. Amongst such duties, that of filling an ice-house, or storing the ice away elsewhere, is one important job which must never be delayed when an opportunity offers, for, the old and trite saying of "make hay while the sun shines," is not more wise than "store ice while it freezes;" for, as every one knows, good and suitable ice for storing away does not present itself every year in the south of England, especially in localities near the coast; consequently the first chance must not be lost.

There are various opinions afloat regarding the keeping of ice, some insisting that it ought to be excluded from the air as much as it is possible to make it, by a close fitting apartment, and covering of litter to an extravagant extent; while others would seem almost to intimate that a free ventilation, if not almost open exposure, was more necessary. Now, the wide difference between these two opinions leaves room for many intermediate plans or ideas, and it is amongst them that I take my stand, without impugning the veracity of those who think that ice keeps as well in an out-door heap as in a well, or house properly prepared for it. I have tried both plans, and must say that my efforts at keeping ice in an out-door heap has been, on the whole, unsatisfactory; and though others may have been more successful, might I not ask if their good fortune in keeping it did not arise from the great bulk they had stored away?

It is well known that the detached masses of ice which float southward from the Arctic Sea, often reach a temperate latitude before they are entirely melted; but it is only fair to conclude, that when they do so, they must have been of huge dimensions at the starting point; subject to the same rule, therefore, must be the ice-heaps which we have stored up in dry sheltered corners. They, too, must have been tolerably bulky to furnish the requisite quantity a family of rank often requires at the end of summer and beginning of autumn; for, be it remembered, that under whatever circumstances ice be kept, the quantity left for use in September here rarely amounts to more than one-fourth of what was stored away in winter, so wasteful a material it is to deal with, in spite of all the preservative means taken to save it.

Where, therefore, an ice-house exists, I would, by all means, advocate its being filled with the best and cleanest ice that can be got, as soon as the weather and other things admit its being so. Afterwards, I would advise an ice-heap formed somewhere, in order to test the value of the two modes. This plan I have, with one or two exceptions, adopted for many years, and the result was in favour of the ice-house. True, the outside heap was of some service, because any that was wanted during its continuance was had from there; but it always took a very large heap to last until the middle of June; and sometimes it was gone much sooner.

The plan I adopted with this heap was this:—A convenient spot, where the water would drain away, was selected near the pond the ice was taken from, and a square, or polygon, was formed by hurdles being made firm in their places. Sometimes the ice was stacked on the ground, and sometimes faggots, or brush-wood, was placed at bottom, but at all times, straw was placed at the sides against the hurdles, and the ice was then introduced, well broken beforehand, and rammed tight in its place, the same as in the ice-house; and when the top of the hurdles was attained, stakes by the side of them were driven in, or some other contrivance adopted, in order to keep up the ice, and allow the heap to be made as lofty as possible; but it is a bad thing to build; and I never saw any workman that could carry it up so as to appear anything like a "steep roof." Such as it was, it was covered over with litter, and if the place was exposed to winds, care was taken to secure the straw against being removed; nevertheless, I always had the mortification

to find my heap sadly reduced by Easter, and sometimes in the middle of May. All that remained of sixty or seventy cart loads of ice was a small portion that would have gone into one, and which, in a few days, disappeared altogether.

This was not the result of one year alone, but of several years in succession; and thence I had come to the conclusion, that an outside ice-heap was an unprofitable affair, except for the purpose of supplying any immediate wants of the family prior to opening the more important store, when my worthy coadjutor, Mr. Beaton's article on "Icebergs" appeared in these pages, about two years ago, wherein he seems to give the preference to out-door-keeping contrivances; but it is possible he may have placed a massive volume of ice in a favourable outside situation, against a smaller quantity in an indifferently constructed house—hence the result.

Now, as there are wide differences in ice-houses, and in different seasons the same house will preserve ice a longer or shorter time, according to circumstances, it is not fair to draw a general conclusion on any one season alone; but I would wish to guard parties against filling a small house with light snow, for if it be so, no ordinary amount of ramming can make it tight, and the whole volume being so much charged with air speedily dissolves. Most people seem disposed to fill it with bright clear ice on a frosty day, when the sounds it emits rings like bell metal. Whether this is the best possible condition, or not, I am far from affirming; certainly it has one advantage, it is likely to be stored away clean, for the clear frosty air keeps both it and the dirt in their respective places; but I am of opinion that it is in a more dense condition when a partial thaw has commenced, and it is more likely to get well broken then; but then it is liable to get loaded with dirt, which certainly does more harm than the benefit it is likely to derive from its increased density; besides which, the propriety of securing ice whenever the weather admits, and it is of sufficient thickness, must not be departed from. It must be proceeded with without delay, regardless of the weather and other external circumstances.

It is almost needless here urging the necessity of having the ice well broken and tightly rammed in, these duties being so well and generally known; but I would warn all who may not be already aware of the fact, that salt ought never to be used in storing away ice, for although confectioners and others use it in the preparations they make, still it is not as a preservative—in fact, it has a contrary tendency, and when it has been used, which it was strongly urged to be done some twenty years ago, the result proved its decaying influences; therefore, when an ice-house is to be filled, rather exercise what care can be done to secure the material well pounded in, and clear from dirt, leaves, grass, or other impurities; and the house being well filled up to the top, the straw need not be added until it has subsided a little, which it will do in about a month or so, when it may be covered over; otherwise, if needs be, it might be filled up with some ice that may have been left in store for that purpose, and the second receding will be the time to cover it up. However, these matters are best known to the individual cases they are meant to represent, so that in winding up this article, it is only proper to remark, that where a choice of water exists from which ice can be withdrawn, select that which contains the greatest amount of spring water of rather a hard kind, for my experience so far has proved it to furnish the best keeping ice.

J. ROBSON.

THE MANAGEMENT OF DOWN EWES AND LAMBS.

(Continued from page 244.)

My last paper upon this subject concluded with the method of making the fold-yard, and the manner of feeding the Ewes previous to lambing. It is now my intention to continue the subject in reference to the treatment of Ewes when they have yeaned, and also of the Lambs as they fall.

The weather is generally very uncertain, and often accompanied by frost and snow, at the time of lambing, with this stock; and it must be borne in mind that some exceptional management is required in consequence. To be well prepared for all contingencies, it is a good plan to have a store of roots at hand, or, what is better, to be provided with the large Drum-head Cabbages, which are not so susceptible of frost as roots, can be more readily eaten by the Ewes, and will furnish the Lambs with a better supply of milk than can be obtained when the Ewes are fed upon roots. The Ewes will, however, do well for their Lambs at the first, when fed upon any kind of common Turnips. It will also be very desirable, when convenient, that a few acres of dry pasture should be held in reserve, containing all the grass which may have grown upon it since harvest, and which, in ordinary seasons, will by this time have become hearty and useful food for the Ewes; and on this land, at the same time, they may receive roots in addition with advantage. This pasture will afford good lying for the young Lambs as fast as they fall; so that they should, with the Ewes, be removed to it, and there remain; receiving a fresh partition of grass, with roots, every day, until the period of removal into Turnips for open field-feeding. This removal should not take place until the Lambs are strong enough to encounter the difficulties which usually attend open field-feeding; which they will generally be able to do at the age of two or three weeks. The foregoing observations, however, must be considered to apply to those Lambs which come healthy and strong; but when the reverse is the case, they should, together with twin Lambs, which are usually more weakly, receive especial care and protection, by being placed in separate apartments of hurdles placed square and under cover.

It should be carefully noticed which it is that requires particular treatment, it being sometimes the Ewe, at other times the Lamb, and often both. When the Ewes are short of milk, American Linseed Cake, commonly employed for feeding purposes, should be used, ground fine, and made into gruel. This may be given to them twice a-day, in addition to the usual supply of food, with great advantage; for, although Linseed Meal may be preferable for the purpose, yet, when required for a large number, it would be somewhat expensive.

Lambs, in some seasons, suffer much in health, and great and heavy losses often occur. There are two complaints to which young Lambs are particularly liable, and which, at the same time,

often prove fatal to an alarming extent, namely, the white scour, and a rheumatic affection. The first, which is often beyond control, I have sometimes cured, when discovered in good time, with a dose of ten drops of tincture of opium, half a teaspoonful of prepared chalk, in half a wine-glass of warm water. This is sufficient for a Lamb at any age under one month, and should be repeated every three hours, until the desired effect is produced. The rheumatic complaint is first discovered by the animal becoming crippled, and losing the use of one or more legs, which swell at the joints, after which the Lamb soon becomes emaciated; and in case actual death does not ensue, they are profitless for keeping, and should be destroyed. This disease, unlike the first-named, has no remedy; but in all disorders a preventive being better than a cure, I shall endeavour to show the causes, and likeliest method of prevention. In my own flocks, for the last twenty years, I have suffered great loss by this complaint, and I attribute the causes to be, *firstly*, the Ewe having more milk than the Lamb can take; *secondly*, the insufficiency of milk, whereby the Lamb becomes unable to bear the effect of changeable and bad weather; and, *thirdly*, undue exposure in low and wet situations. The first cause should be obviated by the milk being drawn from the udder every morning, in all cases where the Lamb cannot take it, for I believe this to be the chief cause of the disease, and often the occasion of the white scour also, for by accumulation in the udder the milk becomes unwholesome. Insufficiency of milk may be in some measure rectified by the before-named use of linseed gruel. The last cause named may be removed by keeping the stock upon the driest and most sheltered parts of the farm, or by artificial protection.

The Lambs having arrived at a fortnight old, they should, with the Ewes, be placed on root-feeding; and it ought, at this juncture, to be determined whether the Ewes are to be fattened with the Lambs, or are to be held on for grass-feeding and fatting in the summer months. I advocate both methods as being advisable upon farms of moderate size, where there is a fair proportion of arable and pasture land. I would take half the number of Ewes (those which bring their Lambs earliest) and keep them for the former purpose, and the remaining half I would hold on for the latter.

In carrying out the former plan, the object is to fatten the Ewes at the same time they are suckling their Lambs; and for this purpose, I should recommend precisely the same mode of feeding, both for Ewes and Lambs, as that which has been written upon in detail in my former paper upon the "Management of Forward Ewes and Lambs," and for which I beg to refer the reader to No. 272, page 206, of THE COTTAGE GARDENER. When the method therein described has been carefully carried out, the Lambs will be fit for market at thirteen and fourteen weeks old, and the major portion of the Ewes will be ready likewise, as soon after the Lambs are sold as the weather will admit of their being clipped of their wool.

By the latter mode of management, it is only intended to keep the Ewes in good substantial condition, sufficient for them to maintain and furnish an abundant supply of milk for their Lambs, and to gradually improve their case, in order that they may, when leaving Turnip feeding, be speedily fattened upon grass. It is, however, a good plan to breed from the Ewes a second season when they have been thus managed. This should, however, be determined by the relative prices between stock Ewes and Mutton; for when stock is higher in proportion than fattened Sheep, they will pay better to breed from again than to fatten upon grass and summer keeping. I have found, for a series of years, that Ewes fattened from shearing-time till Michaelmas will pay about nine shillings per head; whereas the increase in their value when put to the Ram, and kept for stock up to Michaelmas, would, in ordinary seasons, amount to twelve shillings per head.

Nor is this the only advantage to be derived; for the breeding Ewes only require moderate keep, and may be kept in greater numbers by one-third, whereas the fatting Ewes must receive the best summer food upon the farm, and be kept in limited numbers.

To return, however, to the mode of feeding—when the Ewes and Lambs enter upon Turnips it is best for them to begin with common Turnips, which, upon some very dry, sandy, or gravelly soils, may be eaten upon the land uncut if the Ewes' teeth are good; but in case the land becomes very dirty from feeding in wet weather, the Turnips should be cut and given in troughs. The quantity saved by this plan will pay the expense of cutting, in addition to the advantage derived by the animals. Under this system the Ewes receive only Turnips and Hay, and the common varieties of Turnips should always be consumed by the middle of the month of February, after which they should receive Swedes until the end of the Turnip-feeding season. The Lambs must, however, in this case, be fed in the best possible way in accordance with the plan given in detail in a former paper; but I would here state what I believe was there omitted, that a special provision should be made for the Lambs, by the reservation of a quantity of Carrots (where they can be advantageously grown), continuing to feed them upon this root until the early part of April, after which they lose some of their quality, when Mangold may be substituted instead, up to the time of Grass-feeding; indeed, I know of nothing so good to give them, whilst feeding upon grass, as Mangold-wurtzel, cut and placed in troughs, and given alternately with Cake and Peas.

I would here observe upon the great advantage to be derived by feeding Lambs upon White Carrots; for, after several seasons of carefully-conducted experiments upon this subject, I have proved that one-half the quantity of Oil-cake and corn will be saved by their use; that is to say, the Lambs do not, and cannot, eat more than half the quantity of Oil-cake, &c., whilst feeding upon White Carrots, as they do when fed upon Swedish or any variety of Turnips, although they have been allowed a continual supply of roots, and cake, and peas,

ad libitum, in both cases. I must now refer my readers for any further information requisite in Lamb-feeding, and other departments of their management, to my previous paper upon the treatment of Forward Lambs.

JOSEPH BLUNDELL.

THE MAIN CHANCE.

By the Authoress of "My Flowers."

WHAT do my readers understand by the term "main chance?" The believer and the worldly man will totally differ about it; the one will mean treasure laid up in Heaven, dug from the gold-mines of the Gospel; the other, treasures heaped up on earth, toiled for through weary days and anxious nights, too often bringing sorrow as well as gain, and perishing in the using.

I am about to give a sketch of one who sought this last kind of main chance. It is drawn by the able and valuable pen so often busy in the service of his fellow-creatures in these pages; and will, I am sure, interest deeply—I trust, benefit effectually—many a cottage gardener, and many a general reader.

"Godliness with contentment, these be the pillars of felicity," are the words of an eminent modern writer; words which intending emigrants would do well to consider before finally making up their minds to leave the happy homesteads of Old England, for the roughing of the bush, or the excitement of the Australian gold-field. The subject of emigration is fraught with anxious and painful consideration to the Christian philanthropist. That the discovery of gold should have taken place at the same time, in Australia and the southern part of the great Continent of America, is too plainly marked by the finger of God to escape the acknowledgment of any but the avowed infidel, and that, therefore, its results will be for the good of His creatures and the glory of His own name cannot be doubted. Yet it is a distressing thing to witness the rush that has taken place among all classes of society to secure the golden treasures, in spite of risk of voyage, health, and separation from relatives and friends. Some of the readers of THE COTTAGE GARDENER may remember the melancholy but true history of William Green; and I have room to add another instructive lesson from the example of Frederick Jones, who also was in my employ, and the result of whose career has reached me lately by an Australian vessel. Listen, then, ye intending emigrants!

"Frederick Jones was known to me as the son of quiet and respectable people, well to do in their station in life; and when his parents applied to me to engage him to run on errands, and to do other little services which a lad is usually called upon to perform, I did not hesitate in securing his services; for, independent of the good character of the family generally, there was something peculiarly prepossessing in the boy himself. He had a cheerful and manly countenance, with a bright and clear eye, that looked you openly and honestly in the face; nor did his looks deceive, for a steadier, more hard-working, honest lad I never knew, and his obliging and conciliatory manners obtained for him the general good-will of all who knew him. It was with regret, that after remaining with me two years, he left me to follow the business of his father. After leaving me, he continued a regular attendant at the Sunday-school, until, in fact, he nearly reached the estate of manhood, and I looked with much interest on his progress in life. I should, indeed, have been very glad to have taken him apprentice in my own business, but even at this early age he had an eye to what is called "the main chance,"—I mean, the gain of wealth; for, by some means or other, he contracted the notion that his father's trade held out greater prospects of larger wages than my own, and as his parents did not attempt to influence his choice, he was bound to that without hesitation.

"We now come to the eventful period of his life, when, by the lapse of time, he became his own master, and threw off the shackles of his apprenticeship. The news from the gold-diggings arrested his attention, and he determined, at the earliest possible period, to seek in the distant clime

of Australia for that wealth which he thought could not be obtained with sufficient readiness in England. His parents, for some time, opposed his plans, but finding his mind fully made up, they ceased to attempt to influence his choice, and eventually assisted him with the loan of £20,—a large sum for persons in their humble position. The day at last arrived for sailing, and having found a companion who entered fully into his views and feelings, they set sail from Liverpool about eighteen months ago. A letter was received from him from Plymouth, where the vessel touched, and although he had already experienced some of the misery of a sea voyage, it was written in rather good spirits, and he told his mother that they had a clergyman on board, who had preached to the emigrants an impressive sermon on the subject of Abraham's departure at the Lord's command. This letter was full of affectionate leave-taking, and thanks for his parents' assistance; he dealt mournfully on the possibility of not seeing them again, and sent various messages to his younger brothers and sisters.

Months after this rolled away, and no letter came to soothe the anxiety of his parents; and they were almost beginning to be fearful that he had not safely reached his destined port, when the Australian mail brought the long-looked-for epistle. I have only lately read it, so that its contents are fresh and clear upon my memory, and I sincerely wish that its simple narrative was as clearly impressed upon the minds of all intending emigrants, for although evidently written with a view to colour matters as highly as possible, consistently with truth, yet there was such a picture of confusion and hardships to be undergone by the unfortunates who have left the happy shores of England, that would, I am persuaded, make the most sanguine pause before they took a step which would involve great labour and difficulties to attempt to retrace; and, in fact, in most cases, the expence of returning prevents the possibility of doing so."

I must keep the continuation of this interesting tale till my next paper. It is one of instruction and profit, for I am sure, nine people out of ten do not view emigration in its right light. They may think they are going out, like Abraham, at the Lord's command, when they are only fleeing, like Jonah, from His face, and casting His words behind them. Abraham obeyed an express command, and went, "not knowing whither;" but people are very often improvident in the good things the Lord gives them; or, greedy of gain, or thirsting after riches, or wearying for something new and exciting, and they go where temptation is offered, where gold abounds, and where God is not known or worshipped! Dear readers! your gains may be less in your Christian home, but they are safe, and peaceful, and honest. Look more to God. Seek His blessing. Ask Him to bless your basket and your store. Turn from your idols. Put away the abominable things which He hates—the false balance, and the bag of deceitful weights. Depend upon it, *our* business is with ourselves; our worldly matters are the Lord's concerns. Oh! if we pray more, we shall prosper more! Let us dig in the Lord's gold-fields, in our closet, with a closed door. That is the way to be rich, holy, happy. Readers! before you follow poor Frederick Jones, try this plan.

POISONOUS SECRETIONS AND ROUP.

FEW facts in physiology are more inexplicable than that of animal poisons, when introduced, by the absorbent vessels, into the system. That a single drop from the poisonous tooth of the adder should, when applied to a wound, forthwith induce such a fearful train of mortal symptoms is, indeed, astounding. The aid of the chemist is sought in vain to shed a single ray of light on the deadly nature of this "leperous distilment." He discovers nothing in the saliva of the rabid animal, or in the poison of the rattlesnake, save the most simple ingredients,—a little water and mucous, combined with minute portions of a simple and innocuous salt, are all that his art and his science can detect!

On the other hand, possibly, some of your readers may now learn with surprise that these very poisons—the poison of the rattlesnake, of the Cobra de Capello, or of the rabid

animal, &c.—may be *swallowed* with entire impunity. The repeated experiments of physiologists have shown that they may be swallowed and introduced into the stomach without their producing any effect whatever! So, also, is it with the matter from the plague sore, and with other vitiated or specific animal secretions of an infecting nature.

These facts are highly interesting in themselves, and must be especially so to those who are impressed with the notion that Roup in fowls is contagious, and that it is communicated from one to another in the manner which Mr. Tegetmeier points out, viz., by swallowing the nasal discharge of diseased birds, for thus observes this excellent writer:—"I imagine that the fetid, purulent discharge from the nostrils of affected birds running into the water, or mixing with soft food, is the usual mode of propagation; and in other cases, it may spread from one fowl picking the incrustated discharge off the beak or feathers of another." The experiments of physiologists with animal poisons and diseased secretions proving that they are swallowed with impunity, at once scatter abroad Mr. Tegetmeier's theory respecting the communication of Roup. Nay, he himself most unhappily does so a week or two before he promulgates it! for, in the very preceding letter, he recounts how of two of his fowls that became affected with Roup, the one, "into the nostrils of which he rubbed the discharge from a dead fowl," and "endeavoured to inoculate," did not show any signs of the disease until a week and some days after the other! Does not the matter of Roup, then, really possess preservative (instead of contagious) powers against the disease? or, at least, defers the attack, or renders it milder, as inoculation for the small pox? For Mr. Tegetmeier tells us, that the chicken not inoculated very soon died; but he does not tell us of the death of the other, but simply that the attack of Roup was long delayed. Surely, surely, then, swallowing the discharge, or pecking it, communicated not the disease, when, in the case of "rubbing in," its approach was delayed! Why, there may be a great discovery here; something more than is dreamt of in the philosophy of contagionists. In all soberness, we cannot but see what tacking about, what saying to-day and unsaying to-morrow is required to bolster up a theory so very questionable—and something more—as that Roup is propagated by contagion.

I, too, have had four cases communicated to me (and I protest against all experiments made by one person as being so liable to error) similar to those of Mr. Tegetmeier's correspondents. On *dissecting* their accounts, I showed to the writers evident sources of doubt, fallacy, and error. I have not, however, gone to the fountain head; and I think it will, at least, be felt that I have completely turned Mr. Tegetmeier's own position, and that by directing his own artillery against it. And his "monster" case, where his own yard of fowls were decimated by Roup (40 having died), and his neighbour's extensive collection escaped, though separated only by "open lath-work," still stands forth in testimony against his hypothesis of contagion, as do numberless similar, though minor examples, when fowls refuse to be infected.

I trust you will do me the favour to find room for the above remarks, which, I assure you, shall be my last on the subject. My chief object was to show that poisonous and vitiated animal secretions are wholly innocuous when introduced by the mouth into the stomach. I conclude with repeating some sentiments of my first letter, viz., there is great danger in the doctrine of contagion, as amateurs will rest satisfied with only removing the diseased fowl; but what produced Roup in that bird, may produce it in all the rest. Seek out the cause, and be strict in your attentions to warmth, pure air, dryness, clean water, and to variety of healthy food.

F. R. HORNER.

HARDY BORDER PLANTS.

(Continued from page 249.)

ACONITUM VARIEGATUM.

VARIEGATED WOLFSBANE OR MONKSHOOD.

THE *Aconitum versicolor*, before mentioned, and this, the *variegatum*, are a great deal alike; but in this, the blossoms

are pink and white, and very much more loose and spreading than the blossoms of the *versicolor*, which are of a deep blue and white colour, and larger, and much more compactly formed.

This, also, is naturally a taller grower; its stems more slender and straggling in its branches; and its leaves deeper cut, or more rhomboidly cut. The whole plant is quite smooth.

This very desirable species is a native of the South of Europe, and was introduced into this country in the year 1597. It rises from four to five-and-a-half feet high, which makes it a desirable plant for the back or centre rows. It flourishes in any good, common soil, and is readily increased by division of its roots after it puts up its first leaves in the spring. If no increase is required, the old plants may remain in the same spots for almost any number of years, for, should its crown become a little too spreading, it is readily reduced with a fork rather than a spade.

This is one of the tuberous-rooted kinds, supported by an immense mass of root fibres; and when such plants are to remain to flower in the same spots, and expected to do well, the less they are chopped about at the roots the better. I prefer comforting them over the roots, and round their crowns, with a spadeful or two of fresh soil. T. W.

KENDAL POULTRY EXHIBITION.

THE best proof that the taste for poultry-keeping is extending itself throughout the length and breadth of the land is the increasing numbers of shows. Determined not to be behind their neighbours, the fanciers of Westmoreland last year got up a very creditable Exhibition at Kendal. The second meeting was held on the 22nd, 23rd, and 24th of December last, at the National School-room, in Kendal, and it is admitted on all hands that a very great improvement, due, no doubt, in a great measure, to the spirit of emulation engendered by the previous Exhibition, had taken place in the quality of the stock shown. The number of pens entered were 377. The school-room, in which the Exhibition was held, was rather too small for the purpose, and the consequence was, that part of the pens had to be placed in three tiers, so that the birds in the upper tier were too high to be inspected with advantage, and the height of the pens took away the light in front from those below. This was the only drawback that we could perceive in the management, and we are bound to add that it was one that the committee had not the means of preventing. In one respect, an example was set which the managers of other shows would do well to follow. Three days only were allowed to the show. The birds were received at the doors up to nine, A. M., on the Thursday. By ten o'clock all were in their pens, ready for the judge (Mr. Bond, of Leeds) to commence his labours. These he was able to complete soon after two o'clock, so that the doors were opened to the public by three, and an opportunity was thus allowed to all to inspect the birds the same evening. Now, if one judge can inspect and decide upon the merits of nearly 400 pens of birds, comprised in sixty classes, in four or five hours, there can be no reason why a longer number should not be adjudicated upon in the same space of time by increasing the number of judges. By such means a private view, at least to subscribers, might be afforded in the evening of the first day, and all excuse for running the show beyond a third day removed. The birds would thus leave their homes so as to be received at the place of exhibition on the morning of one day; they would remain there during that and the two succeeding days; and, by the employment of a sufficient force, they might all be easily put upon the rail on the third night, so as to reach their own walks on the day following. The only attention required in this respect, at Kendal, is that the first day should be Tuesday or Wednesday, instead of Thursday, so that the fowls should not have to be dispatched on the Saturday night. The managers, and their indefatigable honorary secretary, Mr. James Gillard, will, we feel assured, excuse us for giving this hint for improvement where there was so much to commend.

In noticing the various classes according to their order

in the catalogue, the *Spanish* first claim our attention, and they were, young and old, most creditable to the good folks of Kendal, who carried off all the honours in both classes. The *Dorkings* were, perhaps, even better classes, the prize birds in the chicken class being very good indeed. The *Buff Cochins* presented nothing very particular in the adult class, with the exception of the first prize birds. Among the chickens some creditable specimens were exhibited, and the same remark applies to the *Whites*. In the dark variety, the first prizes were withheld, but a good pen of Black chickens obtained and deserved a first prize in their class. The *Game* classes were exceedingly good, and we repeat a remark which we have had occasion to make before, that we are glad to see these old English fowls cultivated, even though they are no longer required for the purpose of the cock-pit. The *Hamburgs* and *Polands* afforded no subject of especial remark, if we except a good pen of Golden *Polands*, and one of *Blacks*, each of which carried off a first prize in its class. Of the *Bantams*, the *Blacks* were the best. The *Geese* were not particularly good, and the *Ducks* were said not to have been equal to those shown the previous year. The *Turkeys* were a good class. We append the prize list as usual.

SPANISH.

Class 1.—Cock and two Hens. 2. First prize, Mr. R. B. Parkinson, Kendal. 4. Second prize, G. A. Gelderd, Esq., Aikrigg End, Kendal. Class 2.—Cock and two Pullets, chickens of 1853. 17. First prize, Mr. R. B. Parkinson. 24. Second prize, Mr. William Whitwell, jun., Tolson Hall.

DORKING (Single-combed).

Class 3.—Cock and two Hens. 26. First prize, Henry Ambler, Esq., Watkinson Hall, Halifax. Age, one year eight months. 29. Second prize, G. A. Gelderd, Esq. Age, three years six months. Class 4.—Cock and two Pullets, chickens of 1853. 53. First prize, Thos. Ullock, Esq., Bowness. Age, eight months. 54. Second prize, Thos. Ullock, Esq. Age, cock, five months eight days; pullets, eight months.

DORKING (Double or Rose-combed).

Class 5.—Cock and two Hens. 63. Second prize, Mr. Thompson, Hynig. Age, one year six months. First prize not awarded.

DORKING (White).

Class 7.—Cock and two Hens. 71. First prize, Mr. Jas. Rookes. Age, two years seven months. Second prize not awarded.

COCHIN-CHINA (Cinnamon and Buff).

Class 9.—Cock and two Hens. 74. First prize, Henry Ambler, Esq. Age, one year seven months. 75. Second prize, G. A. Gelderd, Esq. Age, one year six months. Class 10.—Cock and two Pullets, chickens of 1853. 113. First prize, Mr. George Gibson. Age, nine months. 86. Second prize, Henry Ambler, Esq. Age, six months.

COCHIN-CHINA (Brown and Partridge-feathered).

Class 11.—Cock and two Hens. 116. Second prize, W. Wanklyn, Esq. Age, cock, one year eleven months; hens, one year eight months. First prize not awarded. Class 12.—Cock and two Pullets, chickens of 1853. 125. Second prize, Wm. Wanklyn, Esq. Age, cock, nine months; pullets, eight months. First prize not awarded.

COCHIN-CHINA (White).

Class 14.—Cock and two Pullets, chickens of 1853. 128. First prize, Edward Calvert, Esq., Warwick Bridge, Carlisle. Blue mark on the crest. Age, eight months one week. 129. Second prize, Edward Calvert, Esq. No mark on the crest. Age, eight months.

COCHIN-CHINA (Black).

Class 16.—Cock and two Pullets, chickens of 1853. 133. First prize, W. Wanklyn, Esq. Age, nine months.

GAME FOWLS (White and Piles).

Class 19.—Cock and two Hens. 140. First prize, H. W. Heaton, Esq. Age, one year. 137. Second prize, Mr. W. Wilkinson, Brigsteer. Age, one year six months. Class 20.—Cock and two Pullets, chickens of 1853. 143. First prize, Mr. Frank Atkinson. Age, six months. 145. Second prize, Mr. John Thackeray, Hawkshead Hall. Age, eight months one week.

GAME FOWLS (Black-breasted and other Reds).

Class 21.—Cock and two Hens. 162. First prize, Mr. George Banks. Age, one year seven months. 150. Second prize, Mr. James Thompson. Age, one year six months. Class 22.—Cock and two Pullets, chickens of 1853. 180. First prize, H. W. Heaton, Esq. Age, eight months. 178. Second prize, Daniel Leeming, Esq. Age, six months.

GAME FOWL (Best of any other variety).

Class 23.—Cock and two Hens. 185. First prize, Henry Ambler, Esq. Age, one year eight months. 188. Second prize, Mr. W. Wilkinson. Age, two years five months. Class 24.—Cock and two Pullets, chickens of 1853. 201. First prize, H. W. Heaton, Esq. Duckwings. Age, eight months. 200. Second prize, Daniel Leeming, Esq. Age, six months.

GOLDEN-PENCILLED HAMBURGH.

Class 26.—Cock and two Pullets, chickens of 1853. 203. Second prize, H. W. Heaton, Esq. Age, six months.

GOLDEN-SPANGLED HAMBURGH.

Class 27.—Cock and two Hens. 205. Second prize, Mr. W. W.

Ruttlidge. Age, one year six months. Class 28.—Cock and two Pullets, chickens of 1853. 225. First prize, Mr. H. W. Heaton. Age, eight months. 217. Second prize, Mr. James Rookes. Age, seven months.

SILVER-PENCILLED HAMBURGH.

Class 29.—Cock and two Hens. 231. Second prize, Mr. George Gibson. Age, one year eight months. First prize not awarded. Class 30.—Cock and two Pullets, chickens of 1853. 235. First prize, Mr. Christopher Brown. Age, eight months. 232. Second prize, G. A. Gelderd, Esq. Age, six months two weeks.

SILVER-SPANGLED HAMBURGH.

Class 31.—Cock and two Hens. 243. First prize, Daniel Leeming, Esq. Age, one year six months. 245. Second prize, Mr. Thomas Robinson. Age, one year six months. Class 32.—Cock and two Pullets, chickens of 1853. 249. First prize, Daniel Leeming, Esq. Age, six months. 248. Second prize, Daniel Leeming, Esq. Age, six months.

POLAND FOWL (Black, with White Crests).

Class 33.—Cock and two Hens. 256. First prize, Joseph Conyers, Esq. Age, one year six months. Class 34.—Cock and two Pullets, chickens of 1853. 257. Second prize, G. A. Gelderd, Esq. Age, six months two weeks.

POLAND FOWL (Golden).

Class 35.—Cock and two Hens. 259. First prize, Joseph Conyers, Esq. Age, two years seven months. 258. Second prize, G. A. Gelderd, Esq. Age, two years six months. Class 36.—Cock and two Pullets, chickens of 1853. 260. Second prize, G. A. Gelderd, Esq. Age, five months two weeks.

POLAND FOWL (Silver).

Class 37.—Cock and two Hens. 261. Second prize, T. K. Atkinson, Esq., Cardew Lodge, near Carlisle. Age, two years six months. Class 38.—Cock and two Pullets, chickens of 1853. 262. Second prize, T. K. Atkinson, Esq. Age, seven months.

BANTAMS (Gold-laced or Pencilled.)

Class 40.—Cock and two Pullets, chickens of 1853. 264. First prize, W. Wanklyn, Esq. Age, eight months. 263. Second prize, H. W. Heaton, Esq. Age, nine months.

BANTAMS (Silver-laced or Pencilled).

Class 41.—Cock and two Hens. 265. Second prize, H. W. Heaton, Esq. Age, cock, two years; hens, one year. Class 42.—Cock and two Pullets, chickens of 1853. 266. Second prize, Mr. John Waugh. Age, six months.

BANTAMS (Black).

Class 43.—Cock and two Hens. 270. First prize, Joseph Conyers, Esq. Age, three years. 269. H. W. Heaton, Esq. Age, one year. Class 44.—Cock and two Pullets, chickens of 1853. 272. First prize, H. W. Heaton, Esq. Age, nine months. 273. Second prize, Jos. Wilson, Esq. Age, ten months.

GEESE.

Class 49.—Best Gander and one Goose. 288. First prize, Mr. John Stamper. Age, seven months two weeks. 287. Second prize, Mr. John Stamper, Newton, Penrith. Age, seven months two weeks.

DUCKS.

Class 50.—Best white Aylesbury Drake and two Ducks. 298. First prize, Mr. Joseph Morton. Age, five months. 302. Second prize, Mr. Henry Lickbarrow, Kendal. Age, six months.

DUCKS.

Class 51.—Best Rouen Drake and two Ducks. 318. First prize, Henry Ambler, Esq. Age, one year six months. 317. Second prize, Mr. R. B. Parkinson. Age, six months. Class 52.—Best Drake and two Ducks of any other variety. 323. Second prize, G. A. Gelderd, Esq. Call Ducks. Age, seven months. 327. Jas. Bousfield, Esq. Age, seven months two weeks. 330. Second prize, Mr. Thos. Robinson. Age, two years seven months.

TURKEYS.

Class 53.—Best Turkey Cock and one Hen. 341. First prize, Mr. W. Whitwell, sen. Age, eight months. 335. Second prize, Jas. Yeates, Esq. Age, nine months.

GUINEA FOWL.

Class 54.—For the best pair. 347. First prize, G. A. Gelderd, Esq. Age, one year six months. 349. Second prize, Mr. Jas. Rookes. Age, one year seven months.

ATOMS FOR THE TIMES.

How are histories made up? Let those who write them answer, and they will, doubtless, say, from scattered facts—things done and given off to the world, claiming small consideration in themselves possibly at the time, but to become largely valuable for the compiler as atoms of knowledge, illustrating the national mind and practical intelligence of the day. Let this be my excuse, then, for wielding my grey goose quill once again, for who can tell but a particle for improvement may be imparted towards a systematic whole for the future?

I intend, in the present paper, to describe a few seasonable facts resulting from my own experience, conformable to what Mr. Errington wrote at page 156 about renovating old gardens. The first instance occurred nine years since

with an old garden (a deep loam, with its surface black from long culture), which came into occupation as a conciliatory conclusion to letting some land; it was willingly given up by the lessee as being a patch of ground comparatively worthless, and which, indeed, would scarcely grow turnips larger than hen's eggs: we shall see.

Firstly, the hedge was "plashed" around, and a dressing of road-scrappings hauled on, and spread at the rate of sixty loads to the acre. It was then bastard-trenched two feet deep, the *crumbs* between the spits only being shovelled upon the surface. This trenching affair caused a sensation rather, though little was said to me upon the subject, with the exception of one man, who evidently considered me as all in the wrong. Poor fellow! his build was Herculean; he was once "I'th' local," and his bearing was upright as a ramrod. I believe he has never to this day forgiven me about that trenching; the "back aches," the "wet shirts," and the "right down hard work," which he was sure to greet me with, and as surely to meet with my pity, was something to lament and laugh about at the same time. Once, though, a terrible row happened. James did not go about his work quite to my satisfaction, and upon my intimation of the same, it caused him to dash down his spade, and boldly confess that he "knew how to trench before I was born." I could only appease his offended dignity by assuring him, that the individual who taught me to trench was a person much younger than myself. What time the horse, the cows, and the pigs did not engage him, he employed during the winter about this process, and the hardship was more in the breach than the endurance. A top-dressing of wood-ashes was applied, and seeds of the *White Belgian Carrot*, and of the *Yellow Globe*, and *Long Red Mangold Wurtzels*, were sown in drills,—the first twenty-four, and the latter thirty inches apart, during the beginning of April; the Carrots becoming finally thinned-out to nine inches, the Wurtzels to eighteen inches, and I shall never forget the splendid crops as a result. I could have run hard upon the heels of a prize with samples of each of those roots at any show in the kingdom. The Wurtzels were consumed by the cows and pigs, a part of the Carrots by the horse, and thirty cwt. were sold as "wonderments"—quite a new feature—in Ludlow market, at 5s. per cwt.

My second experience refers to the garden now in occupation. It has been under cultivation for culinary vegetables upwards of two hundred years, and for a long time had lain under the bane of being a piece of ground occasioning more expense than it was worth. The miserable specimens of crops, with the altogether, that greeted me on my first introduction after what I had been led to expect, was something lugubrious in the extreme, and would certainly have disheartened any person not accustomed to look beyond the surface of things. With me, to probe the subsoil was an object for instant operation. I found it all right, not primitive, but it had never been disturbed since the garden was made; below the depth of thirty inches a wet plastic clay presented itself, which made me decide at once for drains. It is now six winters since, reckoning with the present, that a re-arrangement of the whole thing took place,—a mere sow's ear" affair; but the ground was drained, and sorted, plain trenching I cannot call it, for what with a new fruit border, shifting walks, and so on, the whole body of the soil became removed into a new position; care was taken, however, to keep the subsoil down as much as possible. Several year's collection of rotted debris—famous as a preserve for rats—was cleared out of a back yard, and added as the completion, a planting went on, and this was all the manure afforded.

Just before sowing-time, soot and salt was applied as a top-dressing, and the greater part of the ground became cropped with Potatoes; the result gave over two hundred sacks for the acre, and the bountiful produce the soil has since continued to yield, coupled with the vigorous health of the fruit-trees and ornamental shrubs, shows plainly the principle upon which old gardens can be renovated; and, let me add, all holdings whatsoever, be they great or small, agricultural or horticultural. For my own part, rather than allow the excuse about a want of dung to distress me, I would break up the most uncongenial subsoil as a means for far more recompense.

Practice and science will, it is to be hoped, soon join

hand in hand never more to be parted, and then prejudice and ignorance must give way, for, of all that has been done and written, from Columella down to Mr. Mechi, we still really appear but just stepping upon the threshold of a thorough knowledge of the capabilities of the soil. Comparing notes with what has been achieved for its sister sciences, we need only consider the advancements effected in the breeds of animals, and the steady improvements from good to better in the floral, fruit, vegetable, and cereal products, to become aware that a laxity—and this is the more surprising, the land being a great first cause—prevails towards an equal consideration for its merits. When a soil neglected, capable only of yielding a beggarly produce one year, can, by merely breaking-up the subsoil, and with a trifling extraneous aid be made to yield enormous crops the next year, the question naturally intrudes, How is it that this process is so little entered upon or thought of? There is nothing abstruse about the matter practically, although, abstractedly, it points to the laboratory of the chemist and the way of science. The answer appears to resolve itself—The man who breeds an improved Short-horn, or introduces a Sebright Bantam, raises a superior description of fruit, and improves the properties of grain, &c., seldom achieved these things by chance; a vast amount of study and perseverance have been required to form the animal, and bring the produce to what we now find them, and generations have been required to do it in; yet still the work goes on, and the inquiry at last arises—What their original parents? and whence the wheat and barley?

An experiment with Barley, by-the-by, just forces itself upon my recollection. At page 268 of the last volume, I related the circumstance, perhaps some of my readers may feel interested if I explain the result. Personally curious, and when the scythe was in full operation upon its namesake, I again took train, and the 22nd of August found me once more, note-book in hand, at the Oxford Botanic Gardens; it would have been as well had I deferred my visit until somewhat later, for the Barley, being shaded by the trees from the morning sun, was not so ripe as I thought to find it. According to my judgment this was the state of the boxes—No. 1, red chalk; No. 4, common earth; and No. 7, Herefordshire iron and stone; showed their crops very nearly equal in straw and grain. No. 1 (possibly attributable to its situation) was the ripest, and its corn the finest. No. 2, oolite; No. 3, Brighton chalk; and No. 5, sand; claimed the second degree—a very moderate result. No. 6, Skiddaw slate, and No. 8, a slate, were failures—plucked decidedly. Probably many other persons took an equal interest in this experiment with myself. It is a step in the right direction; and the more public trials we meet with of this sort, the quicker shall we be enabled to form our ideas for practical purposes. It would be well if such experiments were carried out plurally in different parts of the country at the same time, and conclusions compared.

UPWARDS AND ONWARDS.

LETTER FROM AN EMIGRANT GARDENER IN SOUTH AUSTRALIA.

Two or three years since, the writer of the following letter lived as gardener with a gentleman in Ipswich. He left his situation with his wife, and, I believe, two children, to settle in Australia. Subsequently, his father, who was a working gardener, also joined him, taking over the rest of the family. The letter was sent to a cottager of his acquaintance residing in my parish, and on its being shown to me, I obtained his permission to copy it for insertion in the "COTTAGE GARDENER," thinking that it would interest not only other gardeners but your readers in general.

I. S., *Rushmere*.

"Pastures Farm, South Australia,
"April, 1853.

"Dear Friend.—An opportunity now offers itself for me to send a few lines as you wished me to do so in a letter I received from you a short time since, and for which I am obliged. I have been living as gardener to Captain Sturt, up to November, 1851, when I left him, and had a liberal offer made me to take a piece of land, which I accepted, and

here I am in a comfortable house and a good piece of ground (6 acres); my crops have paid well considering, for the first season, and it has been the most expensive one I shall have, having had every thing to buy, my land to fence in, house, stable &c., to build. I never intend to work for a master again, although masters here dare not say any thing to their men. I mean to tell you, this is a place for a working man. I hail the day with pleasure that I landed in this my adopted country, for here a man may feel what he can never feel in England, and that is independence. I wish I had left before; I like the Colony; true, there are three months in the year that are not pleasant, as the heat is great, but not oppressive; the other nine are equal to May or June with you, and things grow well. Grapes are as fine as in any part of the world; the Muscats ripen here in the open air equal to any thing I ever saw in England; and I have seen bunches of other kinds which weigh as much as 27 lbs. and as black as jet, with a good bloom. Peaches, and all European fruits, do quite as well as do many of the Tropical kinds. As you wish to know a little about the animals &c., I will tell you of a few; but there are so many that it would occupy too much room here to mention all. We have the Kangaroo Rat; several sorts of the Kangaroo which is hunted by dogs called Kangaroo Dogs. There is the Wild Dog in great numbers; these are hunted by fox-hounds; the Opposum; the native Cats; Wallabays of many kinds. Of birds there are a great collection; the largest is the Emu, standing five or six feet high, and runs with great speed; the Turkey, large and good eating; Eagles, Hawks of many kinds; and some very large and handsome Bitterns, several sorts—the handsomest is the night Bittern; Robins, five varieties. I have seen Duck and Teal in great numbers; I shot eighteen one evening last week, in about an hour, not five minutes walk from my house. Quails abound by thousands, and the sport is equal to Partridge shooting; they are like the English bird, only about half the size; Swans and Geese are plentiful in winter. The Parrots are the handsomest of all the feathered tribes; there are many varieties, large and small; the smallest is the Budgaraga or Shell or Love Parrot. I have caught twelve and fourteen pounds worth in one day. This is a trade I have taken up, and a very good one it is; I use clap nets. There are hundreds of other birds which I cannot name; but no good songsters. The Laughing Jackass is a curious bird; you would think some one was laughing at you. All the birds here halloo and whistle. I have not as yet had time to get a collection. We have several kinds of Snakes—black, brown, silver, carpet, whip, and others; but the worst of all is the deaf Adder; they are only found by the coast; plenty of Lizzards and Gnanas; these are harmless and very handsome. Spiders of all colours; there is one kind that builds a door with strong hinges by which it opens and shuts; you have to ply it hard with a knife before the spider lets go. I earned six pounds the other day in getting their nests to go to England. We have the Centipede, the Tarantula, Scorpion, and thousands of insects which I know nothing about. Very few Butterflies and Moths, and their colours not brilliant. Nothing annoys us so much as the flies, and these only in summer. We have few Mosquitos; they are mostly near water. As soon as I can I intend to collect, but as labour is and has been scarce, and wages are high, I have had to keep close to work. I employ one hand, and I cannot get a labouring man under seven or ten shillings per day; mechanics earn from twelve to sixteen shillings. If a man wants to better his condition let him come here, and in two or three years he may have a piece of land of his own. I was sorry hear of the death of Mr. J. R.—; it must have been a great loss to many, as there were but few masters like him.

"There have been thousands come to these colonies. The Gold diggings are yielding well, and numbers have made fortunes at them, but very many have done no good; I went, but did not stay. My father and brothers had a long spell at it but did not succeed, except my brother Alfred, who has done better and is there still. EDWIN SMYTH."

BEE-KEEPING FOR COTTAGERS.

(Continued from page 249.)

SECTION 2.—APPARATUS REQUIRED IN BEE-KEEPING.

WE hope none of our readers will be frightened at the long list of apparatus that we shall mention: it by no means follows that every article will be absolutely necessary; or, if necessary, need be made as we describe; certain objects have to be attained, and we describe such articles as we conceive to be useful in attaining such objects; if they can be attained in any more simple mode, by all means let it be done. A bee-keeper ought to be prepared for every contingency, and it may be taken for granted that the little extra trouble that will be required to make one's set of apparatus complete will be well bestowed.

Hives.—The oldest bee-keepers are at present undecided whether straw or wooden hives are to be preferred. The former, from their cheapness, will generally be preferred by cottagers. All stock hives should be of the same size, viz.:—thirteen inches in diameter, that is, across, and eight inches in depth, both inside measure; they should be straight in the sides, and quite flat on the top; a hole, four inches in diameter, should be left in the top; this may be covered over (not fitted) with a piece of inch deal about six inches square, or a piece of straw-work like the hive, about six inches in diameter. If the entrance be made in the hive it may be two inches wide, and the depth of the lowest round of straw; it is better, however, to have the entrance in the floor-board for convenience in operating. (See *Floor-boards*). Three or four spare hives should always be kept ready for use, as there is no knowing what emergencies may arise.

Top Hives.—For each stock-hive, you should have two small super or top hives, at least. These should be the same in form as the stock-hives, one smaller than the other, but both smaller than the stocks; the smaller need not have a hole at the top. One may be ten inches across, by seven inches deep; and the other eight inches across, by six inches deep. Each should be furnished with a small glass window about three inches square. Each window may be covered over by a thick piece of baize, or a piece of linen, three or four times doubled, tucked into the bindings of the hive over the window, and secured from being blown about by the wind by a piece of twine at its lower end, or by a piece of deal the exact size of, and just thick enough to fill up the opening in which the glass is fixed, and so exclude the light; this deal shutter can be fixed in its place by a thin piece of cane laid across it, having its ends tucked into the bindings of the hive; all light must, in some way or other, be carefully shut out. It will be prudent to have a good stock of super-hives always ready, as in fine honey getting weather those on the stock-hives will be quickly filled, and must be replaced by empty ones.

Wooden Hives.—Should it be wished to try wooden hives they may be made of full inch deal, eleven inches square, by nine inches deep, both inside measure, with a hole three inches square at the top, and windows five inches square in two of the sides: these windows should be covered with pieces of zinc rather larger than the windows themselves, and made to slide over the side the hive, between two rows of tacks set pretty closely together in the rows. Small wooden boxes may be used on the top of wooden hives in the same manner as straw supers are used on straw hives; they may be made of thinner wood than the stock-hives, and should have as large windows (to be covered as before) as can be safely made in them.

Glasses.—If it be wished, glasses may be used instead of top-hives; in that case, the top-hives will do as coverings for the glasses, for glasses must be covered and kept warm, or the bees will not work in them. They should even be wrapped round with tow, or a bit of old druggot, or blanket, before being covered, or the bees will, except in very warm weather, go down in the night, and not resume work till late the next day: it is as well to form this druggot or blanket into caps fitting loosely over the glasses; they will not only be more easily removed and replaced when it is wished to examine the glasses, but neatness will be thereby secured. It is very interesting to watch, and, therefore, desirable to have one or two hives worked with glasses; it must be remembered, however, that bees do not work so well in glass as in straw. As the management of glasses and top-hives

is the same (except as regards warmth), no more will be said on the subject of glasses specially.

Floor-boards.—These should be of the same shape as and about two inches broader than the lower part of the stock-hive, and may be made of any stout stuff not less than an inch in thickness. Two bits of wood or clips about nine inches long, two deep, and one broad, should be screwed underneath them across the grain. These clips prevent the floor-board twisting, and should be about six inches apart so as to drop over the head of the pedestal, or bee-stand, which will be next described; by this means the whole is kept firm. It is advisable to nail or screw a thin piece of deal ($\frac{1}{2}$ -inch stuff), the exact size of the lower part of the stock-hive, on the upper surface of the floor-board, in such manner that the grains may run in exactly opposite directions; the grain of the thin piece, in fact, running in the same direction as the clips. In this thin piece, or if the thin piece be not used, then in the floor-board itself, the entrance, which should be four or five inches wide, and half-an-inch deep, ought to be formed. To do this, make two saw cuts just so far apart as is required for the width of the entrance, and running in the same direction as the clips from the edge towards the centre of the floor-board. Let this cut be rather more than half-an-inch deep at the edge, and go off to nothing at the middle; then pare all the wood between these cuts away, and you have a slope leading up into the hive; then neatly fix another small piece of wood in front of this slope, where the bees can alight, and the floor-board is complete. An entrance in the hive itself (which not only helps to destroy the hive, but is, as already mentioned, greatly in the way in operating) is, by this means, rendered unnecessary. It is always advisable to bevel off the edges of the floor-board, to assist the passing off of any drip. Stone or slate for floors must not be thought of for an instant: such materials are far too cold. There should always be extra floor-boards ready for use.

Pedestals, or Bee-stands.—Each hive should have its separate pedestal, and in fixing them an eye should be given to future operations. There should, if possible, be room to get behind them. They may be placed in two's at such a distance apart that the floor-boards, when placed upon them, may be about three inches apart. Room should be left between each set of two to fix a third, if necessary. A pedestal of unbarked fir or larch, about five or six inches thick, looks as neat as anything. It should stand about a foot or fifteen inches above the ground, and be sunk at least two feet into it; the earth must then be rammed down hard all round it. It is as well to give the pedestal the slightest possible inclination forwards, that any moisture which may be condensed upon the combs and may run down to the floor-board may be thrown off at the hive entrance.

Before it is fixed, a cross-piece, barely six inches broad, must be nailed firmly to the head of it, over which the clips of the floor-board are to drop. Should it be difficult to procure such stands as these, old beer barrels, or pieces of stout wood six inches in breadth and fixed on three stout legs, milking-stool fashion, or anything that can be firmly fixed will do as well—neatness, however, is always desirable. The cross-pieces, in fixing the pedestals, must be made to face forwards, in order that the entrances in the floor-boards may come into the right position.

(To be continued.)

TO CORRESPONDENTS.

ICE-WATER (J. L.).—We do not know of any plan by which you could keep clean ice along with ice that is not clean. If you were to put a quantity of clean ice in a metal or wooden case, and bury it in the centre of the dirty ice, it would be a great waste, as a leaf or a twig among it will cause it to waste; besides, the melting of the dirty ice would soon impregnate the purer article, unless the containing vessel was made of zinc and water-tight. If you could keep it so, and your master put a lump or two of it into his drinking water, you would soon have to look out for another master who valued his health more, for there is nothing more unwholesome to drink than ice-water, unless it be the doctored wash in the cellar of a beer-house, and that never gives the threat disease called goitre, which ice-water is apt to do sooner or later. If your master must have iced-water, the cheapest way by far, is to make new clean ice for him two or three times a week, from water drawn from his

own pump. How that is done we mean to show very soon, and we are glad of your letter to remind us to warn our readers against using ice-water even from the purest source. To make new ice every morning in July is a much less costly process than to keep old ice in this country.

BIRMINGHAM POULTRY SHOW.—The sales in the Poultry Department have been very numerous, the majority of the pens having been disposed of—a fact which may be attributed to the moderate prices most of the exhibitors placed upon the birds which there was no intention of retaining by the naming in the certificates of a prohibitory one. One of the lots sold was the pen of the yet scarce Bramah Pootras, sent by Prince Albert. The price was £50; but we believe Mr. John Baily, the eminent and respected poultry dealer, of London, received £110 for a pair of fine specimens of this variety. These sums are by no means so fabulous or absurd as some unreflecting persons may imagine, when we bear in mind that they are given for a desirable addition to the ordinary kinds of domestic poultry, which, for some time to come, must be very scarce in this country, and eagerly sought after. Fowls, under ordinarily favourable circumstances, are, we know, prolific, and with the number of chickens which, with skilful management, may be obtained from three or four hens, in the course of a season, a spirited breeder may reasonably expect to repay himself such outlays as those we have mentioned. Mr. Andrews, of Dorchester, we believe, sold a pen of Cochins-China fowls for £50., and some other pens sold for the same sum; £40, £30, and £20 being given in tolerably numerous cases. The bulk of the transfers took place on the first day, when they amounted to £1,125 6s.; on Wednesday, to £295 13s.; on Thursday, to £136 6s.; and on Friday, to £123 15s.; the total being £1,681.—(*Midland Counties Herald*.) We have many complaints of pens of birds being sold before any visitor could look at them. Two hours should be allowed for inspection before the sale office is opened.

ADAM'S OAK.—P. writes to us as follows: "Between Hemsworth and Great Houghton is a famous old Oak, called 'Adam Oak'; when the sun favours us again I hope to send you a photograph of it, to be engraved in *THE COTTAGE GARDENER*. Also, I should be glad if any of your readers would favour me with any well authenticated history, legend, &c., relating to it. It is situated on Brierly Common, and by its side once stood 'Eve,' another Oak, which has been cut down to make a road across the Common!—at least, so I am told." Can any of our readers give the desired information?

ROUP CONTAGIOUS.—Mrs. C. writes as follows:—"I have some valuable poultry, purchased from Capt. Hornby and others, and a fortnight ago I purchased a few Shanghaes in this neighbourhood; the evening after they were bought, I observed something remarkable about the fowls, especially one which I examined and removed. I gathered from *The Poultry Book* it must be Roup. I therefore removed them all, and sent my best stock a few miles in the country to board. I am fully aware that they all drank together, and it is evident to me that in no other way could the contagion have spread, for they did not run together, only met in the yard. The common fowls I kept at home have nearly all taken it, and upwards of thirty I had killed. My question on this head is—When may I safely venture to have my best stock home, without hazard to any that have not been infected by it? One question more, if you will allow me. Our Poultry Show is fixed for next week. If the nostrils and eyes of my best fowls should be dry, would it be any risk to cage them together during those two days?" We should not hesitate to have the birds back to the yard if it was purified by chloride of lime, &c., as recommended by us recently; and the yard allowed to remain empty for a week or two. Nothing would justify exhibiting the birds for some months, or until quite well.

SPANISH FOWLS EGGS (T. F.).—We should put them under a Game hen rather than under a Dorking hen. *Poultry Houses* are treated of most copiously in the first number of *The Poultry Book*.

NORWICH SHOW.—Mr. Playford says we were wrong in considering that he alluded to Mr. Catling when commenting upon the award of the Prizes, "because he was not there; and if he had been, is sure he would not have done it." So we said.

GOLDEN HAMBURGERS (S. B.).—If there is any difference, the *Spangled* are rather harder than the *Pencilled*. The latter, however, are the best layers. Write to any one who has taken prizes for them, and state what you require.

TURKEYS (A Worcestershire Lady).—We think from four to six hens are the best numbers for one cock, and we prefer the smaller number.

LAME SHANGHAI COCKEREL (W. Windley).—What kind of lameness is it? Is it a limping with one leg, or a want of power to move it; or is it a spasmodic lifting up of the legs higher than usual when walking?

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WEEKLY CALENDAR

M D	D W	JANUARY 12—18, 1854.	WEATHER NEAR LONDON IN 1853.									
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
12	Th	Julus pusillus; grass roots.	29.568—29.412	53—38	S.W.	24	4 a 8	13 a 4	6 51	13	8 38	12
13	F	Craspedosoma Raulinsii.	29.454—29.382	48—45	S.W.	—	4	15	7 45	14	9 0	13
14	S	Oxford Term begins.	29.776—29.672	47—34	W.	04	3	16	rises.	☺	9 22	14
15	SUN	2 SUNDAY AFTER EPIPHANY.	29.406—29.393	47—31	S.W.	12	2	18	5 a 18	15	9 44	15
16	M	Lithobius forficatus; stones.	29.392—28.996	45—33	S.	28	1	19	6 29	17	10 4	16
17	Tu	Lithobius variegatus.	29.540—29.157	42—34	N.W.	—	0	21	7 42	18	10 24	17
18	W	Lithobius vulgaris.	29.943—29.762	41—41	N.	08	VII	22	8 57	19	10 44	18

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 42° and 31.3° respectively. The greatest heat, 56°, occurred on the 14th in 1849; and the lowest cold, 4°, on the 14th in 1838. During the period 104 days were fine, and on 85 rain fell.

NEW PLANTS.

METTERNICHIA PRINCIPIS (*Princely Metternichia*).



At first sight this plant has the appearance of a loosely-flowered *Azalea indica*, but it belongs to the Natural Order of Nightshades, and to Pentandria Monogynia of Linnæus, being grouped in the Natural System with *Sesuea* and *Cestrum*. It is in our stoves an evergreen shrub of about three feet high. It was named by M. Mikan, its discoverer, in honour of the Austrian Prince Metternich-Winneburg. Its flowers are white, with greenish tubes, and "powerfully and deliciously fragrant." It blooms during August in our stoves.—(*Botanical Magazine*, t. 4747.) Some authorities have stated, that in its native country it attains the height of twenty-five feet, but Mr. Gardiner, curator of the Ceylon Botanical Garden, and who had seen it growing about Rio Janeiro, says it is a shrub smaller than *Stiflia chrysantha*, the average stature of which is eleven feet. He justly describes the flower as "not unlike those of a *Datura*."

ABIES BRACTEATA (*Bracted Silver Fir*).

We are so utilitarian that we rejoice over the introduction of a new hardy timber-tree much more than over the appearance among us of the most beautiful new flowers. Right glad are we, therefore, to find that this noble example of the true Pines is now settled among us, and may be purchased of Messrs. Veitch. It was introduced by their

able and successful collector, Mr. Lobb, who we congratulate upon having returned to England in health and safety. It is a native of California, where it was first discovered by Dr. Coulter, and subsequently by Douglas, in latitude 36°, and at an elevation of 6,000 feet. Mr. Lobb thus describes it:—

"This beautiful and singular tree forms here (he writes from the Californian forests) the most conspicuous ornament of the arborescent vegetation. On the western slopes, towards the sea, it occupies the deep ravines, and attains the height of 120 to 150 feet, and from one to two feet in diameter: the trunk is as straight as an arrow; the lower branches decumbent; the branches above are numerous, short, and thickly set, forming a long tapering pyramid or spire, which gives to the tree that peculiar appearance which is not seen in any other kinds of the *Pinus* tribe. When standing far apart, and clear from the surrounding trees, the lower branches frequently reach the ground, and not a portion of the trunk is seen from the base to the top.

"Along the summit of the central ridges, and about the highest peaks, in the most exposed and coldest places imaginable, where no other Pine makes its appearance, it stands the severity of the climate without the slightest perceptible injury, growing in slaty rubbish, which to all appearance is incapable of supporting vegetation. In such situations it becomes stunted and bushy; but even there the foliage maintains the same beautiful dark green colour, and when seen at a distance it appears more like a handsomely-grown Cedar than a Pine. No doubt it is one of the hardest trees of the Californian vegetation, and is equally well adapted for clothing the mountain-tops as the sheltered valley.

"The cones, too, are quite as singular as the growth of the tree is beautiful; when fully developed, the scales, as well as the long leaf-like bracts, are covered with globules of thin transparent resin, presenting to the eye a curious and striking object. Douglas was mistaken in saying that this Fir does not occur below 6000 feet of elevation; on the contrary, it is found as low as 3000 feet, where it meets *Taxodium sempervirens*.—Perhaps the introduction of no *Conifera*, not even that of the Deodar, has excited a more lively interest in horticulture and arboriculture than that of the present species, with its porcupine-like fruits."—(*Botanical Magazine*, t. 4740.)

Mr. Lobb is believed to have also introduced another new Conifer from California, for which Dr. Lindley has proposed the name *Wellingtonia gigantea*. This, however, is premature, for it is not yet clear that it has generic characters sufficiently distinct to separate it from *Sequoia*. In the *Gardeners' Chronicle*, Mr. Lobb thus speaks of this "Giant of the Forest"—

"This magnificent evergreen tree, from its extraordinary height and large dimensions, may be termed the monarch of the Californian forest. It inhabits a solitary district on the elevated slopes of the Sierra Nivida, near the head waters of the Stanislaus and San Antonio rivers in lat. 38° N., long. 120° 10' W., at an elevation of 5000 feet from the level of the sea. From 80 to 90 trees exist, all within the circuit of a mile, and these varying from 250 feet to 320 feet in height and from 10 to 20 feet in diameter. Their manner of growth is much like *Sequoia* (*Taxodium*) *sempervirens*, some are solitary, some are in pairs, while some,

and not unfrequently, stand three and four together. A tree recently felled measured about 300 feet in length, with a diameter, including bark, 29 feet 2 inches, at 5 feet from the ground; at 18 feet from the ground it was 14 feet 6 inches through; at 100 feet from the ground, 14 feet; and at 200 feet from the ground, 5 feet 5 inches. The bark is of a pale cinnamon-brown, and from 12 to 15 inches in thickness. The branchlets are round, somewhat pendent, and resembling a Cypress or Juniper. The leaves are pale grass-green; those of the young trees are spreading, with a sharp acuminate point. The cones are about $2\frac{1}{2}$ inches long, and 2 inches across at the thickest part. The trunk of the tree

in question was perfectly solid, from the sap-wood to the centre; and judging from the number of concentric rings, its age has been estimated at 3000 years. The wood is light, soft, and of a reddish colour, like redwood or *Taxodium sempervirens*. Of this vegetable monster, 21 feet of the bark, from the lower part of the trunk, have been put in the natural form in San Francisco for exhibition; it there forms a spacious carpeted room, and contains a piano, with seats for 40 persons. On one occasion 140 children were admitted without inconvenience. An exact representation of this tree, drawn on the spot, is now in the hands of the lithographers, and will be published in a few days."

FORMER periods of our national history have been variously described as the Dark, the Crusading, and the Augustan Ages; and if we were asked as tersely to characterize that in which we are now living, we should say it is the Common Sense Age.

We remarked, last week, upon the absurd system, now abolished, of keeping Kew Gardens closed against the people, it being now reasonably concluded, that if natural beauties and intellectual pleasures are placed within the easy reach even of the poorest, there is still so much of good in human nature, that very many would prefer such gratifications before more sensual indulgences. That the conclusion was just, is told by the myriads frequenting Kew, the Parks, the British Museum, and the National Gallery.

Encouraged by this, Common Sense has carried the facilities for mental improvement a step further; and in the Mechanics Institutes, their lectures and libraries, all well attended, we observe another attractive power at work to wean the labouring classes from debasing habits.

Common Sense, we think, now suggests to go another step onward. Mechanics Institutes provide rational amusement and wholesome instruction for the artisans and the residents in towns, but we now require *Village Institutes*.

A great movement in that direction is organising, under Lord Shaftesbury, for the better supply of rural districts with cheap and good literature; and Lord Ashburton's proposal to have the Diocesan Schoolmasters better instructed in "common things" will be a powerful auxiliary. His lordship offers prizes to the Schoolmasters now training in the Winchester Diocesan School; the prizes to be awarded to those most fully conversant with the things of every-day life. The importance of having the Village Schoolmaster a centre of "science with practice" in all that relates to our bodies, our clothing, our food, our dwellings, and our gardens, is a suggestion laden with most beneficial results.

We had written thus far when we received the following from Mr. Fish. It is highly valuable, as offering the suggestions of a reflecting mind in one well conversant with the wants and habits of those with whom Village Institutes and Village Schoolmasters will have to be in intimate connection:—

"One of our old winters has returned." Many "a merry Christmas, and a happy new year," has been expressed to old friends in the sounds of the living

voice that would have been unheard but for the iron-cased roads which old Jack Frost had kindly provided for all pedestrian tourists. Writing this on the second day of 1854, after a fortnight of weather below the average in temperature, the days of my *teenhood* seemed to come again at seeing many a sturdy youth and rosy-faced damsel, with buoyant steps, hastening on to a father's home, or a grandfather's fireside; and if a dark shade passed over the happy recollections conjured up by such a bright scene, it was my knowledge of the well-known fact, that in the home of many an honest and industrious peasant, the high price of provisions, the cost of fuel, the comparative inadequate remuneration for labour, the uncertainty of obtaining constant work in such circumstances, combined to render the larder less well filled, and the genial fire less crackling and bright than usual.

"Blessings, many, rest on those, who, feeling their responsibility as stewards of the bounties of Providence, have, by distributing clothing, fuel, and food, insured the practicability of their humbler neighbours rejoicing at this season along with them! May more blessings come to those, who, whatever the extent of their charities, never make charity an opiate for concealing from themselves the demand of justice that a fair day's work should receive a fair day's wages; and who, less or more, are imitating the conduct of a Nobleman, who, according to one of our best correspondents, has raised every man's wages 4s. per week; thus guaranteeing the possession of the necessities, and some of the comforts, of existence, without breaking in upon that self-respect and high-minded independence of feeling so intimately bound up with the honour and power of a people, that they never can be too much encouraged among our working comrades; but which an indiscriminate charity, approaching to almsgiving, never fails to uproot and destroy.

"Let us look around us still further. What is the aspect of our peasantry, as respects knowledge and morals? We hear much talk about "the schoolmaster being abroad;" and how nicely it swells a period, and turns a sentence, to introduce something about the "march of intellect,"—the progress of thought—the force of public opinion—the wonderful doings, as respects advancement and purity in this nineteenth century of ours! No doubt, contrasted with the past, every philanthropist has reason to take heart and rejoice; but, if we compare general attainments with advantages and privileges, we have reason to hang our heads in very

shame. How general are the scenes in these festive times, in many villages, where the cares of home and kindred are forgotten, and a jollity, so wild, as to touch upon the insane, reigns supreme! Those scenes are in the drink-shops. Tobacco, beer, and spirits have so drowned thought and so muddled the mind, that it choruses, to the echo, sentiments so sensual, and songs so immoral, as once would have mantled their cheeks with indignation. Are such the scenes we expect will promote purity of thought and integrity of action?

"Sufficiently *near to*, if not *in*, most of our villages, schools have been established in which reading and writing, &c., have been taught; but it is often *now*, and too generally, until lately, these were taught as a mere act of routine. Too little attention has been paid to imbue the mind of our youths with the importance of these elements of instruction, not so much on account of what they were worth in themselves, but as valuable keys for unlocking whole storehouses of wonders and sources of elevated enjoyment, even should the range of our enquiry extend no farther than the world on which we dwell. Unfortunately, we are so naturally averse to the pure, that, as a too general fact, it is found that the mind, whose reading had been directed little farther than a catechism, or a work on theology, will be too apt to neglect reading altogether. This will be none the less likely to be the case if the few books within reach should in any way be associated with the hard knocks and canings of the village pedagogue. I would humbly submit this last remark to the strenuous advocates for retaining the "Book of books" as a class book in our schools. Even *now*, some of its most beautiful passages are never read by me without a vivid recollection of the thumps I received when trying to read them when a boy. The Bible and the cane we would divorce for ever from coming in contact in our schools. Let it be reserved for those of their classes advanced beyond the infliction of the rod.

"Be this as it may, the art of reading, when acquired, will be lost if not practised. Men have worked with me who could not read nor write, and yet had learned both when young. Others, who practised what they had learned regretted that they could get nothing to read. Just ask yourselves if that is not the condition of many a village with which you are acquainted? What are the men to do in such circumstances?

"I say nothing now of the unfitness of education females of the same classes receive for throwing all the charms of utility, and the more than witchery of a well-balanced enlightened mind as magnetic attractions around humble homes. To our disgrace it must be owned, that girls, as to education, have ever been less cared for than boys, and hence their comparative weakness as an improving influence on the rougher part of mankind.

"Well, what are these men to do? Many of them, you see, cannot read, but they *think*. They cannot help that; every moment thought is thrilling through their brain. What a fact! How suggestive of responsibility! Will that thought be always concealed? No!

Man is inherently social. We all relish meeting with our fellow-men, and exchanging thoughts by embodying them in words. The same of the man who reads, but who can get little to read. He pants for social intercourse. Where shall he find it? In the ale-house. This ability to read the paper makes him a sage and a philosopher there. The man who cannot read has ears; becomes almost as learned as his reading brother, and learns to talk of murders and sensualism as glibly, until too often the hearts of both become as hardened as those of the perpetrators of the villanies on which they delight to linger.

"Shall I go to the home of such men, and, beholding the broken furniture, the tattered bedclothes, the general misery, denounce them as all that is vile? Nay; a word of love would be more powerful than that! Rather let us ask, 'Have I nothing to do with this man's vice and misery? Have I, knowing that character is so far moulded by circumstances—have I, knowing the strong impulsiveness of human feeling—have I, knowing that mind must be incessantly active—have I—knowing all this, and feeling all this—done what in *me* lay, that my erring brother should have means and opportunities for his faculties being employed upon the pure and the elevating, instead of revelling among the gross and the degrading?'

"Responsibility in these matters is now becoming more felt, and I am happy to say that gardeners and their employers are not behind in the movement. Reading-rooms, at times combined with a coffee-room, good libraries, and occasional lectures on generally interesting subjects, in homely language, would constitute, in time, great opponents of the beer-shops. From the correspondent I have already alluded to, a gardener to a nobleman, I lately received the following account of the forming of a village library:—'We have just established a reading-room and library in the village of S—, which is only about half-a-mile from the garden. The room will be lighted and warmed from six o'clock to ten in the evening, and supplied with the *Times*, *Illustrated London News*, *Cottage Gardener*, *Gardener's Chronicle*, *Sussex Express*, *Mark Lane Express*, *Builder*, *Household Words*, and many other periodicals. Our library is not extensive at present, but we are in hopes it will improve as we go on. Members are to pay 1s. entrance, and 6d. per month subscription. We have had several meetings respecting it, and have now got about forty members. Mr. S., the tutor at —, has been its chief promoter. The clergyman has also taken an active part, and his lordship has become patron, so, altogether, I am in hopes we shall be able to do some good, although, I am sorry to say, the people in this neighbourhood are not very fond of such things. I am in hopes it will keep many young men from going to a public-house at night, as the room will be pleasant and warm, with plenty to read for amusement and instruction.'

"Who does not join in the hope of our friend? Who does not feel grateful for this double example of kindness in the nobleman referred to? Had I to make a

similar effort, I would do away with the entrance-money, reduce the fees to 2s. or 3s. a-year, and thus encourage the peasantry to be members; for though contending against making working men recipients of charity, in any shape, let us advocate knowledge being placed within their reach on the easiest possible terms. Instances are known to me in which such institutions never got beyond *Struggle Point*, until the terms were made so low as to invite the masses. Numbers here are everything as respects energy and usefulness. A man that can pay sixpence is nothing to six men who pay one penny each.

"Then, as hinted above, if our friend was to give a short lecture on gardening, and the worthy tutor, and the good clergyman, were to do the same as respects natural history, mechanical philosophy, social economics, &c., a variety and interest would be added that would be both pleasing and improving.

"Knowing the exciting temptations of the liquor-shop, we have but slender hope of seeing great improvements in our large villages until such institutions are introduced, combined with good-sized gardens, or an allotment for every cottager."

WE shall be much obliged by our readers informing us the lowest degrees of cold they have observed, recorded by their self-registering thermometers. One correspondent, at Bury, in Lancashire, says:—

"My registering thermometer, last night (Dec. 27th), indicated 7°, viz.:—25° below freezing point, and at 8 o'clock stood at 13°. I am anxious to hear if the frost has been as severe elsewhere.—W. X. W."

On the same night, at Southampton, the thermometer was at 24°, but on the 29th it fell as low as 18°. At Chiswick, on the 16th of December, it was at 7°, and on the 28th at 8°. At Croydon, in Surrey, on the 29th, it was 15°.

These temperatures, however, are far above that of the night of January the 3rd, when, near Nottingham, the thermometer sank to 4° below zero, or 36° below the freezing point of water. We shall be glad to know what was the lowest temperature of that night in different parts of England.

Mr. E. J. Lowe, of the Observatory, Highfield House, near Nottingham, says,

"The following are the temperatures of the coldest days here since 1809:—

1810	..	Feb. 21	..	12° above zero.
1814	..	Jan. 9	..	4° "
		" 13	..	3° "
		" 14	..	5° "
1815	..	" 23	..	11° "
1816	..	Feb. 9	..	2° "
1820	..	Jan. 1	..	6.5° "
1823	..	" 19	..	6.5° "
1826	..	" 15	..	11° "
1830	..	" 19	..	10° "
1838	..	" 20	..	9° "
1841	..	" —	..	4° "
1845	..	March 14	..	13° "
1851	..	Jan. 3	..	4° below zero.

"On the 14th of March, 1845, the temperature, on the grass, fell to 1° below zero; to-day (Jan. 3) that tempera-

ture was 0° below zero (as indicated by several corrected thermometers), and at 4 feet above the ground, upon a flat board, 8° below zero."

CULTURE OF COLEWORTS—SUGGESTIVE.

ABOUT thirty years since the culture of these most useful vegetables was principally confined to the market-gardens about the metropolis; our ordinary country gardeners knew and cared little about them. In later years, however, their culture has been much on the increase; our markets have been so abundantly supplied with them at all periods, that their importance has become familiar to all classes, and almost every private garden of importance possesses, at least, a winter supply. Indeed, so much have they increased in esteem, that they have gone far towards supplanting the larger Cabbages. As some confused notions are abroad concerning them, it will be well to state here in what their peculiarity consists. The fact is, that a new race of Cabbages may be said to have sprung up, of which, probably, the *Dwarf Early York* is the parent, at least, on one side; but most of them are far superior to that once useful kind, in being more succulent and fuller in the head, for the *Old York* had a sort of twisted character, which detracted sadly from its value. It is well known that our market-gardeners select for seed from those with thick and succulent midribs in the leaves, as making them of superior quality, and as bunching better for market; and in this respect such kinds as *Barnes's Early Dwarf*, *Atkins's Matchless*, &c., when from a *true stock*, are far superior to the *Old York*.

Now, it so happens that most of these improved dwarf and early-bearing kinds produce a very superior amount of sprouts to the old *Early Yorks*, and although the market-gardeners care not a fig for sprouts, private gardeners frequently find them of great service. Market-gardeners have to pursue a more rapid rotation, based, in the main, on the peculiar demands of the market,—they must produce any given crop when it fetches the highest price; the private gardener, on the contrary, has to consider the peculiar needs of a given family; and it not unfrequently happens that his crops are of the greatest importance in this respect, when they would be of least value in the market. In this way, then, stands the relative position of the parties; and I consider it very necessary to all little gardeners, whenever old blue aprons undertake to explain sound maxims of culture, to clear away those mists which have too long formed a kind of halo around common sense matters, and either dimmed the eye of the would-be learner, or so refracted the rays of light, as to make plain matters appear distorted or unsatisfactory.

I well remember that when the "*Atkins's Matchless*" Cabbage first came up, and when, of course, it might be had in much purity, planting about ten poles of ground with it about the beginning of July. The land had been deeply trenched for the preceding crop, and much of the subsoil brought to the surface,—this subsoil a reddish sand, called, in Cheshire, "*booted*" sand, from a slight tendency it has to the clayey principle, for when squeezed in the hand it is slightly adhesive. The ground was well-manured with old hotbed linings, which was first dug in a spade deep, and then forked over,—a favourite practice with me when I can spare so much labour, for I find that it makes the soil, for about ten inches in depth, a well-mixed compost, and the dung being old hotbed linings chopped into mince-meat, a most complete mixture takes place, and not a fibre but has food close to it—the soil, also, thus preserving moisture in a summer's drought. These Coleworts were planted at a distance averaging one foot apart, and when they came in use, which was through September and October, their heads, or shoulders, fairly

met each other, and being used up betimes from the circumstance of their being in such a congenial compost, they sprouted forthwith, and by the middle of November the whole surface of the plot was one uniform mass of young sprouts, and never before or since have I seen such a marvellous produce. As I always sow a successional crop about the last week of June, which period would be too early for our more southern neighbours, we had no occasion to use the sprouts until the succeeding February and March, when they produced thousands of what might be termed small Coleworts, just what our fancy cooks like, and forming a valuable connecting link between the true winter Coleworts and the early spring Cabbages of the dwarf and early-hearing kinds. But, be it remembered, this mode, with the best of soil, can by no means carry out the designs of the cultivator, unless the kind be genuine; and of this, together with the disappointments incident to the cultivator through the unguineness of spurious kinds, albeit well prepared and well named, more in a succeeding notice.

And now I have attained, I hope, a point, as to vegetable economics, which was, indeed, the aim I took in taking, "the Colewort, and its culture," for my theme, viz., to shew, that even in the culture of so simple a thing as Dwarf Cabbages, a progressive improvement in culture (as to copious supplies to meet the demands of families from their kitchen-garden) has really taken place, as compared with the kitchen-gardens of some twenty years since; I have, therefore, to suggest, that those gardeners who still adhere to the old system of growing heavy crops of summer Cabbages of large size (famous, to be sure, on exhibition-tables, as astonishing those who are simply gratified with a sudden display), just give the subject a second consideration, and see whether the conveniences and comforts of a private family in the country be not rather enhanced by a capital vegetable garden, which keeps, as they say, "the pot a-going," than by those diversions which are created by extraordinary specimens occasionally, and which, whatever merit they may possess, too often serve to decoy the attention from matters less specious, but of more general utility.

I much fear that our great exhibitors, who live near great towns, where a big dust must be kicked up occasionally, to evince progress, will blame me for thus, as they may say, decrying the exhibition-table. I must beg, however, to assure them, that no one can admire a big cabbage more than myself, although a *Drumhead*; and that when I feel a strong appetite, I should, certainly, prefer a big one to a small Colewort for my dinner; but such narrow views must not be allowed to settle a whole case, and that these *ex parte* ways of settling an affair, although sometimes very popular, are not entirely worthy of the age we live in. The great fact is in the exhibition of vegetable specimens which astonish by their size, that they ought simply to be considered as samples of what *may be done*, rather than what *ought to be done* on every occasion. If any prefer the exhibition-table to a good round of domestic conveniences, I have no right to blame them; but still it is proper such persons should know that not unfrequently such aims are rather antagonistic to that constant and useful supply in a long succession which is so agreeable to our cooks. When, however, the case becomes agricultural rather than horticultural, it is purely what has been termed a "breeches-pocket argument." Generally speaking, he who can produce, in one crop, the greatest amount of produce from a given space of ground is the greatest hero. Thus it is that gardeners are not always more successful than Mr. Meehi: their balance sheets will not please everybody.

It is well for those of our friends whom we can manage to impress with the due amount of importance.

the subject deserves, to observe, that from the second week in June to the middle of July is the period when a proper succession of Coleworts should be sown; and that they *must be dwarf*, early-hearing, round-hearted kinds; as for names, we are in danger of being swamped with them. Our market-gardeners, who, many of them, save their own kinds, hold the seed-shop names in supreme contempt. The fact is, that be a seedsman what he may, *he cannot* undertake to produce kinds in perfect purity; his business is too complicated to admit of it.

Plenty of manure is indispensable to their culture; for Blue Cabbages, which are the result of poor land, drought, or club, are, by no means, sought after by good table men.

One point more. I hold it good practice, with the private gardener, to take up well-hearted Coleworts in the end of November, and "heel" them right close together; and as soon as a stiff frost sets in, and the ground is well seated, to cover them with loose litter, keeping them frozen with all his might; and when they must *thaw*, to take care that their final thawing and inurement to light runs over about three days, avoiding sudden sunshine. All this requires care, of course.

R. ERRINGTON.

PRESERVING AND SERVING ICE.

ICE crowned the last days of the old year so completely that all the ice-houses and ice-cellars in the country are now, or ought to be, quite full of it; *ice-bergs*, or ice-heaps, ought also to be finished, if not thatched, before this sees the light. In our "Dictionary" there are two ways named for doing the ice, one of which, with plans, is by the late Mr. Cobbett, and the other by your humble servant. Any one who follows the last plan need not fear about the safety of his ice-heap until ice comes again; or, at least, till ice-time comes round, whether we shall have ice then, or not; and any one who follows Mr. Cobbett's plan will assuredly find his ice run short when he most needs it. Some one played off a hoax upon Cobbett about keeping ice, and the ice world was so much divided upon the subject, for many years after his plans were given, that this hoax got into a ready circulation among all the books and newspapers on gardening. No one ever wrote more clearly than did Cobbett, and that was the main reason why so many people in the country read his works, who never believed one-half of what he said on politics, and in his wranglings with those from whom he differed in other things; hence the great demand for his "Cottage Economy," in the sixteenth edition of which the hoax about keeping ice first appeared; but he said the plan was not his own, he only believed what some one else told him of it; and he said, that if the plan should fail, the house he proposed would be a model for a pig-stye for all generations. Those who have not the "Dictionary," or access to that edition of the "Cottage Economy," will understand the plan from this description of it:—A strong pole is fixed in the ground like the handle of an umbrella, fifteen feet long; the umbrella roof is of straw, and four feet thick; the wall all round, and up to this roof, is also of straw, and of equal depth, and the circle within is ten feet across. The usual drainage is very good, and the ice is to be packed all round the centre post up to the roof, and if any of our readers can keep ice with that contrivance till St. Swithin's day, I pledge my word that I shall go down to him to ice the things for his next party dinner, if he only pays me for travelling expenses. The great error in this plan is the centre post, thirty inches round, without it the ice would keep double the time, but it is only waste of time and money to make so small a heap as this; although it is ten feet across, the real diameter of

the ice is only five feet, and that includes the post in the middle, where the ice will give way first. In a very short time there will be a wasting cavity all round the post in communication with the air at the open drainage, and the air at the drainage being warmer than the air in contact with the ice along the cavity, a column of it will rise round the post, and not finding a vent at the top, it chills and falls down by the side of the ice, and thus a constant circulation goes on, wasting the ice more and more till all is gone. A walking-stick, even a straw, or a dry leaf, in the midst of ice, soon makes a cavity all round it.

It would have been unpardonable in us to have left out Cobbett's plan from the "Dictionary," because it had a world-wide celebrity, but it would be worse, if we did not show the utter impossibility of securing a supply of ice by it in our country. Cobbett was as well aware as any of us that damp is the great enemy to ice, and he is quite right in advising to have it in a dry place, and away from the drip of trees; farther than that, he knew nothing practically on the subject at all, as he himself acknowledged, but his admission is not known to one in ten who heard his scheme recommended.

Others have recommended salt and salted water to be poured on the ice, from time to time, as the ice was being packed. That idea must have originated from not understanding the reason why salt is so largely used with ice by the confectioners for producing an intense degree of cold for freezing their mixtures, but that very cold is obtained at the expense of the ice, which melts much faster with salt than without it. I have known one or two gardeners who used salt in packing their ice, and kept a good supply, notwithstanding; but that cannot affect the question; they might have had more ice left at the end of the season if they had not used the salt, and, which is the same thing, the quantity of ice put together might be much less when salt was not used.

The next question is watering ice at the time of packing it, in order to make the whole into one solid heap by the freezing of the water between the particles of ice. Whether this watering does more harm than good, or any good at all, depends on circumstances. If the ice is thin, so as to be easily pounded very small, and that it is so pounded on a keen frosty day, there is no doubt but the watering will cement the ice more firmly, so to speak, therefore, the less air is left in it, and the longer it will last in consequence. But if the ice is very thick, as a good deal of it has been this winter, the men will not pound it small enough for the watering, pay them as you will, or make them half drunk to excite them to the work. The thing is impossible, for there is not another kind of labourer's work half so distressing to the limbs; coming in their way but once a year, they never get so used to it as to be able to stand long at it without slacking; all that I know quite well from a long experience, and I dwell on it, because I know, equally well, that there are many masters who blame their gardeners, or any men in charge of labourers, if they do not get more work out of the labourers on certain occasions when a pushing job like this comes to hand. It is quite true, that a gardener, who understands the right way to manage a set of men properly, can very easily get an extra job done quicker, now and then, than the usual run; but that does not apply to the icing days. Therefore, seeing that strong, thick ice cannot be got broken so small as to be safe to use water from a rose pot with it, the best plan is not to use water in such cases. Then, again, if the ice is not finished while it yet freezes, as often happens, the water will not freeze much by the mere coldness of the ice; and, there being cavities innumerable in a heap of lumpy ice, the water playing into them on a soft day, and perhaps the finishing day, will do a great deal of harm.

The next question for consideration is snow and ice put together. Now, I must confess that I have very little practice to bear on this question. I have occasionally ordered the sides of an ice-heap to be plastered, as it were, with snow, and I never found any ill effects from it, neither can I say it did much, or any, good; but, judging from what I have seen of snow-heaps that were made for the purpose of icing, when ice could not be had, and knowing that salt and snow melting together will cause a more intense cold than ice and salt, and also knowing that the fiercest sun, in our climate, has not the slightest perceptible influence on the surface of a deep snow wreath, if the air is allowed to play over it, I am quite satisfied in my own mind that snow is just as good and useful as ice, and is as easily, if not easier, kept than ice by itself, and that packing ice-heaps with snow, as the work goes on, is the best practice; and I should think that the drier the snow was at the time the better it would answer the purpose. If we put two parts ice and one of snow together, in filling an ice-house, or in making up an ice-heap, I should say that would be about the right proportion; but let me be understood as having no actual experience on that point.

I think the question between egg-shaped ice-houses sunk in the earth, and ice-heaps put together in the open air in the form of a sugar-loaf, is now decided, by universal consent, in favour of the latter; but whether the question of confining the air in an ice-house, on the old stuffing principle, be settled, or not, I cannot say. I am satisfied myself that such confining of air is decidedly a wrong practice.

I have thus touched, briefly, on all the mooted points that have been discussed on this subject, as far as I am aware of, except that of keeping very thick ice, such as that from America; of that I have no experience, nor do I think it of public use if I had. All the ice for this season, among ourselves, will be gathered and stored before this appears, and that is what I have wished before I said anything more about it, because I did not want to open the question again, but before the end of the year I should much like to hear of the different modes of packing ice which have been put in practice this season; the quantities that were put together in different places; the kind and depth of covering; and the result of the whole, as to how the ice is kept, as, notwithstanding our present experience and success, who can say but a better way still may yet be found out?

And, now, for the long-sought-for information about making ice-plates and dishes, to set iced things upon at breakfast, or on the dinner-table. I have not to go to Mr. Gunter for the receipts, for I have had a pitched battle against his best man since I promised to tell of my own ways. We actually excelled Mr. Gunter's best *frigorifics* when Prince Albert dined at Shrubland Park; but I now forget the name of his manager there, who acknowledged the superiority of our Suffolk manufacture. I have dined with him, however, there, and with others, who saw how things were got up in different parts of the country, on such occasions, and making allowance for good breeding, and "present company," the palm was spread in favour of the "present occasion," &c., &c. If you saw "how things were got up" for the last Christmas dinner, when no ices were wanted, believe me, it would not have taken away your appetite as it did—I mean, by partaking of it so freely.

How to make hoar-frost by the side of the kitchen fire was a problem with us boys when I was at school, and the whole art and mystery of making iced things, ice-plates and all, is on the same principle; but we must not confine the subject so much; for I venture to say that there was not the value of a pin in the Crystal Palace which could not, in miniature, at least, be represented in ice as clear as crystal, beginning with the

crystal fountain itself, and so all round to the English dolls. To make hoar-frost by the side of the fire, you have only to take a wooden pail, or bucket, with iron hoops on, and half fill it with snow, and mix one-third common salt with the snow, and set the bucket so near the fire that the heat will melt the snow. As the snow melts it dissolves the salt; and the melting will produce such intense cold as will make actual hoar-frost on the iron hoops, and sooner, if they are wetted a little, on the side farthest from the fire. If the wood of the bucket is damp, and an equal quantity of snow and salt is melting, the hoar-frost will soon appear on the outside of the bucket, but not so soon as on the iron hoops. I have seen this done scores of times; and the wildest and most mischievous *prank* a boy can be guilty of is to get another boy to put his tongue on the frosted iron hoop, pretending that the hoop is hot all the while—in two or three seconds the tongue will stick to the hoop, so as to tear off the skin before it can be released—so let no one try this experiment until he learns to take off the tongue as quickly as the twinkling of the eye.

Now, a bucket more than half-filled with ice pounded very small, and a good quantity of common salt mixed with it, will give nearly the same degree of cold any day in the year; and so things are iced. Every iced thing one can buy in London is done by ice and salt melting in a wooden vessel, or ought to be in a wooden one; but, of course, any other vessels might answer nearly as well. The iced things you buy at public stalls near London, and other large places, might have been made at Inverness, and sent up in wooden casks, packed like Dutch and Irish butter, if they had free communication by rail beyond Aberdeen so far; then they scoop it out of these casks with strong wooden spoons, put it on china plates—then, and not till then, is it ready for your order. Pewter vessels are the best to put the creams in for icing, and they are to be bought in London of all sorts and sizes as easily as beer pots, but I do not know where in London.

To make a bowl, a tea-cup, or a plate, of ice, all that you have to do is to get the mould (of pewter), fill it with the clearest water, and put it in the ice-bucket, covering it all over with a little salt, besides the salt already mixed with the ice in the bucket; let this be done two hours before the plate or other vessel is wanted at table, and place the bucket in a cool room; the larder is as good as any place in summer; in the winter time any place will do away from the fire; just when they are ready to go in to breakfast, have so many pats of butter, made that morning, standing on ice, and get a nice common breakfast-plate on the ice, with the butter, but the butter must not be on the plate that goes to table. Now, get out your pewter-plate mould, and before you open it, plunge it in a bucket of warm-water, such as you could bear your hand in, and leave it in half a minute, but you must learn the exact time by experience, as one mould requires more time than another that might seem of the same size and substance; the reason for dipping the mould into the warm-water is to free the ice-plate from the inside of it; now open the lid of the mould, and slip out the ice-plate on a clean, dry cloth or towel, wipe it all round, to get off the damp caused by the hot-water, and put it on the cold china plate, and put the cold butter on it, and off you go as fast as anything straight to the breakfast-table, and who knows how the crystal plate and cold, firm butter was got; but there it is, sure enough.

Imitations of Strawberries, and other fruit, also of all kinds of fishes and birds, fancy things, and what-not, may be done in ice after the same manner, for the dinner or breakfast-table. For *pic-nic* parties, what is easier than to carry along with you as much of iced-cream as will cool the whole party, in little wooden

casks or jars, rolled in woollen cloth or Welsh flannel. Mr. Gunter would send any quantity of ice-cream to Aberdeen, and it would be as firm and cold as when it left his still-rooms in London, till the last particle of it was consumed.

There is a good deal of practice and expertness required to manage all this, and the first attempts will be like the first lessons in music, or drawing, or dancing, or anything else; and for a whole life-time some persons will succeed much better than others. In getting up fifty varieties of things, or moulds, out of the ice-buckets, one person ought to manage the plunging hot bath, and slide out the ices as fast as possible, on something cool and dry; and a second to take them up equally fast, and arrange them on cool plates or dishes; and a third carry them off to the dining-room with all speed. But be sure of one thing—see that any deformed article is not the perquisite of the operators, else there may be more of them than will cool their ardour in the work.

Ice-buckets ought to have a few drainage holes at the bottom to let off the water as the ice melts, and wooden hoops are better than iron ones, as the latter rust, and take the cold faster to their sides. As to the real quantity of salt to be used, I cannot just say, by weight or measure; the very commonest will do, and if you were to put weight for weight of ice it would not spoil it, but far less will do, and you will need much more of the salt in summer. D. BEATON.

SNOW AS A PROTECTOR.

"My cold pits have got covered with snow; shall I sweep it off, so that the plants beneath may have a little sunlight, when there is any in these frosty days; or should I allow it to remain until a change in the weather removes it? I don't mind covering and uncovering, if I shall advantage my plants by my labour."

This is the purport of many enquiries from friends who cannot see how our general principles are to be applied to particular cases. If only part of what has been said of protecting materials be correct, then snow, when loose, and sufficiently thick to prevent frost penetrating, is one of the very best protectors we could use. Its colour places it low in the scale either as an absorbent, or a radiator of heat. Even where there is a little sun, about the shortest day, if the frost is at all keen, the sun will affect the snow merely on the surface, and what is softened there will be congealed again by the frost of night, but still leaving a quantity of lighter matter beneath it. As long as this light, flossy matter remains between the glass and this surface that is softened and hardened by turns, there will be no danger of frost of a few degrees penetrating by the glass that would injure half-hardy plants usually kept in such places. Care should, however, be taken that the frost does not enter through the walls, or by the ends of the sashes where they rest on the wall plates. When, however, the snow is alternately melted and frozen, so as to resemble a cake of ice on the glass, it would then be necessary to throw some litter over all to prevent the greater radiation of heat from within, as the very compression of the snow squeezed out, as it were, all the confined air, the possession of which, independent of its colour, made it a bad radiator, and a good non-conductor of heat.

Now, if in such a pit the heat within was not high enough to melt the snow contiguous to the glass, that heat would not be sufficient to lengthen the tissues of the plant, nor yet to cause fungous broods in the shape of damps to spread. Hence, for the mere preserving of a plant—the maintaining it, so far as its nature will permit, in a state of healthy rest—it matters but little whether that rest be a period of fourteen hours or four-

teen days. In such a long night as the latter period there must be no extension of growth. As low a temperature within as the plants will stand without injury, is the first essential of safety, when we wish, from motives of economy or necessity, to keep half-hardy plants shut up night and day.

In the case of hardier plants, such as Cauliflower plants under hand-lights, whenever a frost of a week or so is expected, and the days are too dull to give the plants any advantage from uncovering that would compensate for the labour, it is preferable to have the plants and ground slightly frozen before putting this night-cap in the shape of protection over them. The cold pits under my care have not been uncovered, now, for almost a fortnight. Some of the tenderest had straw covers over them previously; others had a little dusting of rough hay shaken over the glass; and some had merely the protection of the glass. The weather, as respects cold, seemed threatening, and more protecting material was got in readiness. A fall of five inches of snow was hailed as a temporary respite from a regular attack on the little hay-rick we had saved from the first mowing of the least prominent parts of the lawn. The sun, on pits facing the south, when it did shine, lessened the thickness of the snow, and on these places, especially where it was likely to disappear altogether, a little hay was shaken on, or litter of any sort; but as to ease our trouble in this respect, it has happened, several times, that when we were thinking of doing this another slight fall of snow has come and thus saved us the trouble.

Plants under frames, on a north border, such as the little bedding *Calceolarias* mentioned the other week, and which have not yet been touched, are all quite comfortable under their snow mantle. The sun, when it did shine, never touched the snow there. I find that these pits, owing to the heat stored up in their bottoms, &c., and with this mantle over them, which, while it lasts, prevents heat and cold easily penetrating, have a very equable temperature, ranging from 34° to 38° . Did I allow them to remain in such a darkened state, with a temperature 10° higher, I should expect to witness, at the end of a fortnight, a quantity of miserable spectres, though, if this weather should last for a month, I feel confident that when uncovered then, the plants will look as nice as a field of Wheat, that for a similar time, and a similar agent, has been shrouded from the light of day. If the snow fell on the field of Wheat after the ground was crusted with frost, the farmer knows that many of the enemies of his favourite crop will be kept inactive, and that when the snow disappears his crop will look much the same as before it came. But if, as sometimes happens, a good fall of snow should take place when there has been no frost to affect the ground, though frosty weather afterwards causes the snow to remain, everyone knows, that when, after a gradual thaw, that snow has gone, the Wheat plant will be found to have grown, at least to have extended in length, and if not exposed afterwards to sudden frosts when in this tender state, the farmer has reason to look upon such a snow fall as his best friend. Now, what in this latter case affects but a little in the way of injury such a hardy plant as the Wheat, even when long covered, would be apt to spread destruction among a pit of half-hardy bedding plants. Suppose, for instance, that in an afternoon the enclosed atmosphere of such a pit should be 45° , the external heat 38° or 40° , but that owing to the air being more rarified and cold between us and the clouds, the moisture that otherwise would have reached us as rain descended in the shape of a heavy fall of snow, and that on the score of economy we wished to secure that snow as a protecting agent, so long as the frost which it brought with it continued, then the true points of safety would be to reduce the temperature within, by tilting the

sashes a little behind, so as to take away every inducement to make the plants lengthen and grow while thus excluded from light.

The question of uncovering cold pits, by sweeping off the snow that envelopes them, so as to give them light, becomes thus a matter of expediency, economy, time of the year, and object aimed at. For instance, when in such places we wish to grow on plants as fast as we can, and the labour can be commanded, which, after all, is not much where there are only a few glass sashes altogether, then no safe opportunity of giving sunlight should be missed. Was it my object to *keep* merely as great a number of small plants in as small a state as possible, so as to economise time, room, and labour—then, during the months of November, December, and the first part of January, I should be sorry to sweep off a good covering of snow under such supposed circumstances of continued frost; because, in the first place, I should quite despair of getting any frigidomo, in the way of a protector, equal to the snow, whatever price I paid for it; and, secondly, because, in addition to knowing that the plants were kept in the stationary circumstances I wished them to be, I know that what sunlight they could get under such circumstances would not, in the way of advantage, counterbalance the labour of uncovering and covering, and the getting of the protecting material in the stead of the snow. But suppose, now, that I wanted these tiny things to take a bit of a race in growth, so as to attain some size by April and May; and suppose, again, that we had a snow fall in March, and sunny days afterwards; I should not hesitate in clearing away the snow to admit sunlight then, so as to induce and consolidate growth. Circumstances, then, must regulate our procedure.

In all we have said above of half-hardy plants being safe under glass with a covering of snow, it must be understood that we mean the snow to be thick—from six to twelve inches—and the frost not very severe. When the snow was only one or two inches thick, and the frost was 10° to 20° below the freezing point, the sun, obeying the laws of radiation, would soon let the frost penetrate, and plenty of other covering must be held in requisition, in addition to or without the snow.

Two words more. If the frost should penetrate, never uncover until some time after a thaw has come; and, again, if long shut up, give the plants subdued, not full, light at first.

R. FISH.

THE WOODS AND FORESTS.

(Continued from page 231.)

THINNING A NEGLECTED PLANTATION.—This is not an easy task to do effectually without injuring the trees that are left. It requires considerable judgment and experience, or the trees will be so injured by a too sudden exposure to the cold air rushing through them as to be several years in recovering the effects of it. I have seen young slender Oaks completely killed by a too severe thinning. The best way, in such a case, to proceed, in my opinion (and I am borne out by practice), is this—

Supposing a plantation, no matter to what extent, has never been pruned or thinned till the trees have grown so high and so thick that all the lower branches are dead, and the lowest of these have dropped to the ground; the very tops of the trees only have branches, and these touch each other; the poles of such a wood will be tall and slender, and, therefore, when one is fixed upon to stand, and all the others near it are cut down, this tree to be left for a noble timber tree will look something like a birch-broom stuck into the ground, the broom end upwards; this appearance the best woodsman in the world cannot remove; but he can

prevent, in a degree, the serious injury that would accrue, by first going through the wood, and marking, by some means or other (a circle of red paint is a good method), all the handsomest and best trees, at such a distance from each other as would allow them sufficient space to form good heads when they have space to expand their branches. Supposing there are five trees between these standards, as I may term them, then let the marker, with some other kind of mark, place it upon the two trees on each side of the standard. These are to be cut down that season, and these will leave three trees standing as a protection to the standard till it has become partially prepared, as it were, to stand by itself.

This opening-by-degrees process will give the standard, also, an opportunity of sending forth a few more branches down the stem. (I refer more particularly to deciduous trees.) This putting forth of new branches must have been observed by any one in the practice of thinning woods, and these branches assist very materially in enabling the tree to acquire more strength to withstand the strong draught that it will be exposed to when the second thinning is done. The standard tree should have two seasons allowed to get used to its partially unsheltered position. In the third season, two of the three trees left should be removed; there will then be one left, and the standard will have to bear a much greater exposure to cold winds, but it will now be enabled to bear them; it will have acquired two years' additional strength, the wood will be more consolidated, and the roots will have had a larger space to gather up strengthening food. Imagine the difference between this preparatory thinning process and that of taking away all the five nurse trees at once. Any common-sensed man must perceive that it is better to thin by degrees.

"Oh but," says one, "it is too much trouble; and do not tell me: the trees that are left are natives of this country, and are hardy enough; they will stand any breezes, and will soon thicken, get stiff and upright, and will then have nice clean boles without any fuss about thinning and pruning." Such is the language too often used by the managers of the woods of this country, but I do trust the proprietors of such neglected wood will open their eyes and see the folly of such let-alone doctrines. Trees, like every other production of the field, are given to man to dress and keep, and no owner of woodland, if he neglects it, is excusable.

To proceed with our thinning process. The one nurse left should remain to fill her office for at least three years more, so that the whole process of thinning a neglected plantation will extend over a period of seven years. The trees for timber will then have become proof, by gradually acquired strength, against all storms and cold winds. If it is desired, the space between and under the trees may either be planted with proper under-wood shrubs, such as Hazels, Hollies, Laurels, Rhododendrons, &c., or the trees that have been felled may be allowed to produce stools of suckers, or the whole ground may be dug over and sown with grass. All these considerations, or practices, depend, of course, upon the will and objects of the owner. If game is desired, the underwood will be cherished; and the best protection for pheasants I ever saw was made by plashing the whole of the underwood so that it formed a perfect unpassable thicket. No poacher could possibly penetrate it, and the owner, now, alas! defunct, soon had the finest preserve of pheasants in the country. This wood so plashed had been a neglected plantation.

T. APPLEBY.

(To be continued.)

THE IRIS.

(Continued from page 263.)

A BED of the Spanish and English bulbous Irises is, when in flower, very effective, and, as they flower during the summer months, they should be made use of more than they are as bedding-out plants.

These species are named *Iris xiphium* (from *xiphios*, sword-like, the leaves being of that shape), and *I. xiphoides*, which means that the latter's leaves are like those of the former. They are distinguished from each other by the petals of the first being as narrow as the flat-shaped stigmas, and the germen or seed-vessels being round; whereas, *xiphoides* has the petals broader, and the germen acutely angular. These are distinctions sufficient to separate the species. Each species has been hybridised, and there are numerous varieties now cultivated chiefly distinguished by the sporting of the colours.

Propagation: By Seed.—Every amateur in Florists' flowers that propagates them by seed ought to be more anxious to improve the variety he saves seed from than merely to increase the number of roots; hence, no seed should be saved but such as has been hybridised with a view either to improve the form, the colour, or the size. Now, in order to succeed with more certainty in attaining these objects, the pollen of the one possessing one of these qualities in the highest perfection should be dusted upon the stigma of another possessing the property of size. From such hybridised flowers the best seeds most likely to bring improved flowers will be obtained. All other blooms that have not been operated upon should be cut off as soon as the flowers fade.

The seed will ripen about the end of September, and should then be gathered just before the seed-vessels burst. Examine the bed daily, and cut off such seed-pods as appear to be quite ripe; lay them as they are gathered upon a large sheet of brown paper placed in a window where the morning sun only will shine upon them; in this position the ripening process will go on, and the pods will open one after another. When all are gathered, and properly dried, then clear the seed from the cases; let them lay another day or two exposed to the sun to harden them, then put them up into brown paper, and place them in a drawer in a dry, cool room. Mice are very fond of the seeds, and will soon eat and destroy the stock, if they can get at them; therefore, the seed should be put in a secure place, where it will be safe from their depredations.

In early spring, prepare a place to sow the seed in, the best will be a gentle hotbed, with a one or two-light box upon it; but if that cannot be conveniently had, it may be sown in square boxes, or flat earthenware pans. The soil proper for them is good loam, sandy peat, and leaf-mould, in equal parts, thoroughly mixed together, but not sifted. If the hotbed is used this compost should be at least eight inches thick. If boxes or pans are used let them be well drained. The surface of the soil should be patted gently down and made quite smooth, then sow the seed rather thinly upon it, and sift some of the compost through a rather fine sieve upon it, taking care that the seed is not buried too deep; the thickness of a crown-piece will be sufficient. Place the light on the frame, giving air night and day, unless it be very frosty. Those in pans may be placed in a greenhouse.

As soon as the seed-leaves appear then increase both the quantity of air and water freely, but at distant intervals. I mean, thoroughly wet the soil once, and then water no more till the soil is dry again. Continue this treatment through the summer, till the leaves begin to turn yellow, then withhold it. As soon as the leaves are quite decayed, then sift the soil through a very fine-

meshed sieve, picking out, as the operation is going on, all the young bulbs, even the very smallest, for the smallest may produce the best flower. When all are carefully picked out, dry them for a few hours, and then put them in a canvass bag, and hang it up in a room without fire till the planting season arrives. In the mean time prepare a bed, three feet wide, and as long as may be needful, to plant them in.

Choose an open part of the garden, and a dry subsoil. If it is not dry it must be made so by drainage. Dig out the soil to the depth of fifteen inches, and then lay in three inches of broken stones or brickbats, and upon them place a covering of thin turf, the grassy side downwards. Fill in the soil again, if of tolerable good quality, mixing it, as the operation goes on, with some dung and leaf-mould, in such quantities as will make the soil rich and light. A little sandy peat would be of service, as also a liberal allowance of river sand, unless the soil be already of a sandy character. With these additions the soil of the bed will be considerably raised; but if the bed is prepared some six weeks or two months before it is wanted, a settling will take place, so as to lower it nearly to the original level, or only just high enough to suit the flowers. In this state let it lay till the month of September; then is the time to plant the seedling bulbs. If there should be any great difference in their size it will be advisable to select the largest size, and plant them by themselves at one end of the bed. Draw drills four inches apart, and three inches deep, across the bed, and plant the larger bulbs (if any) four inches apart in the drill; the smaller size may be planted thicker—two or three inches will be space enough. When all are planted, level down the drills with a rake, and they will require no further care till the spring, after they have made their way to the surface; then, with a small three-pronged fork stir up the soil, to give it a fresh appearance, and to admit freely the warm rains and air of the spring and summer months. In this bed they may remain two years, when some of them will have attained such a size as to warrant the expectation that they will flower. They should then be taken up, dried, and stored, and treated like the old flowering bulbs. T. APPLEY.

(To be continued.)

PEAS.

SOWING AND PRESERVING.

It is certainly a just and wise provision of nature that the seeds of plants possess a greater degree of hardihood than their parent plants. This is, perhaps, most conspicuous in those of the tenderer exotic natives of the tropical regions, which, though never naturalised with us, yet are enabled to ripen their seeds in our hot-houses, and these seeds are capable of enduring an amount of frost, I might say equal to that of indigenous plants. It is true, a seed is but a bud containing in embryo the future plant; but the same beautiful law of nature has so ordained that the mere bursting of the shell which confines the cotyledon, does not, in every instance, involve the young offspring in destruction, for they are possessed of a greater degree of hardihood at that age than when further advanced. This is especially the case with hardy or half-hardy plants, most of which endure our winters but when in a young state. Now this rule has been taken advantage of by the flower-gardener, who sows his annuals (from the temperate regions) in the open ground the beginning of September, and sees them stand an amount of frost they would not have done had the plants been larger. Subject to the same law is the tenderer kinds of Brocoli and Cauliflower, and many other things, which, having

a duration allotted them, and a duty to perform in that time, are fortified with a power of resisting many inclemencies, which a look at the map of the country they came from would induce a belief they were not able to do.

This example of adaptation to circumstance is of inestimable value in many points of view. Our farmers sow their Wheat in autumn with something like a certainty that nothing short of a Russian winter (without snow) will kill the young plants. True it is that another point bears on this last case, and one that should be mentioned in conjunction with a young plant's hardihood. The seed itself continues to supply nourishment, or assistance, to the young plant long after we might suppose, by its size and habit, that such assistance was needed; and the shrewd, observant husbandman, notices the check the plant receives when it loses that support, which, in local phrase, passes by various denominations; and the plant, left there to its own resources, has to struggle and maintain an existence by its own exertions, aided, of course, by the external circumstances in which it is placed, and the soil in which are its roots.

I have introduced the above observation by way of calling attention to the culture of one of our most useful vegetables, *i. e.* Peas—to obtain an early dish of which has long been regarded as an important point in horti-culture; and in furtherance of this object, the attention of seed-growers and others has been directed to the improving of varieties in cultivation, so as to hasten production as much as possible.

It is generally allowed that the Pea, as well as most cereals, &c., are all annual plants, and that their capability of standing over one winter to ripen their seed in the next season is merely owing to the accidental circumstances of their being sown at such a season as just enables them to attain a size capable of resisting the elements, without incurring a danger of their falling a prey to the severities of the season, which they are sure to do if beyond a certain size. Now, to have the crop of such a size as to secure itself, as well as to produce the earliest possible pods, many things are to be considered—as the position in which the crop is placed in, and the nature of the soil, as well as the latitude of the place; coupled with these, is also a prophetic knowledge of the kind of weather they are likely to encounter, a circumstance as much important to success as any other, and one of which the cottager has as good a chance to foretell as any philosopher, of whatever standing he may be; and as the wisest may be mistaken and at fault, it is advisable, in all cases, to provide against such mishaps as that of a flourishing looking crop of Peas being destroyed in February.

This was much the case last season; the mildness of the autumn and early winter months favouring their growth, they had progressed so far as to be unable to endure the rigours of frost and snow when these tokens of winter visited us; now we know that crops which last year were sown at the same time they had been for many years perished as above, while, in former seasons, they had flourished and done well: the reason was obvious—the mildness which continued so long, favoured their growth to such a degree, that many crops were a full foot high, or more, when hard weather set in, besides being in that delicate state which moisture and mildness imparts. The time at which such crops were sown was somewhere about the middle of November; later crops stood better; those at or about Christmas being the best. Now, this was sufficient to teach all those who did not know before, that, besides the November crop, it was also advisable to put one in at Christmas, the latter being the more certain to succeed.

Independent of taking care to have a successional crop, it is also advisable to look to, and preserve the

first by all available means, for besides the weather, a host of enemies will very likely attack the crop. Mice, in the first instance, will seize and devour the seed just when it is coming through the ground, if not before. Rats are equally destructive, and worse to trap, but they are rarely so numerous. Wood Pigeons are also sad enemies; these are only frightened away by the use of gunpowder; while, perhaps, the worst to combat is the slug, which, in mild seasons, abounds in such numbers as to render the protection of the crop a work of difficulty. Nevertheless, it must be persevered in; and in addition to the use of coal-ashes as a covering, and of lime, soot, &c., as dustings, the rows might also be partly covered with barley chaff, which is one of the best of all coverings, being a preservative against the slug, as well as a protector to the plants themselves. We, therefore, urge on the necessity of this article being more used by gardeners who have the means of obtaining it, for it not only saves Peas, but it will be found useful to other things as well, its sharp points, and angular file-like sides, rendering it a more formidable barrier to the slug than anything else we are acquainted with. It is needless to say that sticks should be supplied as soon as possible; and when severe frost sets in suddenly, after a long period of mild weather, some other covering should be adopted as well. This will suggest itself to the cultivator in sundry ways; and it is not the most costly that is at all times the most useful, for a few boughs of Furze, evergreen Firs, or anything that way, will sometimes serve as well as waterproof covering, &c.

In closing this account, I cannot recommend any one Pea in particular as likely to meet all the wants of the case in hand, for I believe the number of really distinct kinds is much fewer than many people imagine. I have so repeatedly been deceived in a so-called new one being only a "Kent," or "Charlton," that I fear it will not be safe to say which are generally good; but I have found *Warner's Emperor* universally so, and as it is a fair, good kind, of medium height, and not new now, consequently, likely to be genuine, I would recommend it to the inexperienced for the earliest crop. Later crops I will speak of hereafter, as other considerations will determine these; and as the first crop will have been sown some weeks before these pages reach the reader, I would advise those who have not tried this Pea in November, to try it in January, and I question much if the six weeks difference in the time of sowing will make more than half that number of days in the gathering, other things being the same. This, however, with other matters relating to second crops, must be postponed to another time.

J. ROBSON.

MANAGEMENT OF DOWN EWES AS BREEDING STOCK.

(Continued from page 244.)

THERE are two circumstances which concur to make a flock of Down Ewes, as breeding stock, in all probability, more profitable for the future than they have been hitherto; first, the great and increasing consumption of mutton and lambs; and secondly, the almost entire supply of wether mutton being obtained by early maturity, and derived from sheep killed at two years old or under. Coupling these two, with other favourable circumstances, it must be considered as highly encouraging to flock-masters to proceed with energy and judgment in increasing, as much as possible, the extent of their stocks of breeding Ewes.

Early maturity is certainly become a new feature in

fattening of sheep; and, as it is likely to be very much more extended, there is no doubt but it will induce breeders of Down Sheep to use more judgment than has been hitherto shewn in the selection of their stock. This brings us to one of the most important points in the whole range of sheep management; and one upon which the success and profit of a flock mainly depends. For it must be admitted, that those kind of sheep which are most in demand by the purchasers, and which will consume the green crops of the farm with the greatest amount of profit, possess those qualities which should direct our judgment in selection.

Under the head of "Downs," I must name three varieties as demanding our attention, the origin of all, being, without doubt, the South or Sussex Downs; the other two being founded upon crosses with other breeds, and are called the Hampshire Downs and Shropshire Downs. The two latter are at the present day engrossing the attention of breeding and flock-masters to a much greater extent than formerly. It is, however, well known, that all Down varieties of Sheep have been greatly improved for useful and profitable purposes by the advocates and admirers of each particular sort. It may be considered a somewhat difficult task to advise parties to select as breeding stock, for general purposes, any sort in particular, as the soil, situation, and climate must be taken into account. My intention is, however, to offer a few ideas upon the subject, and which are gleaned chiefly from my own experience and observation. For farms situated upon the high and exposed chalk hills of the southern counties of Hampshire, Wiltshire, Dorsetshire, and Berkshire, the improved variety of Hampshire Down proves to be well adapted. There is no question but that they are more hardy than the pure Sussex Down; which fact, together with the advantage of additional size, and early maturity, has influenced the minds of breeders in selecting this variety; and I do not hesitate to say, that the Hampshire breed are quietly making way, and driving the Sussex Downs from many of the above-named districts.

In the south-western counties of Dorsetshire, Somersetshire, and Wiltshire, upon the best soils, where breeding flocks are kept, the Sussex Downs still predominate, although they are greatly improved in size, and in many other respects, since their first introduction, which took place after the Horned Sheep of these districts were given up. Many of the finest flocks of breeding Ewes of these counties still retain the advantages which they derived from a cross with the Horned Dorset; and, although they are, in appearance and general character, South Downs, yet this dash of the breed, together with the influence of soil and climate, gives them the propensity for early breeding, and for the purposes of producing early Down Lambs, renders them much in request by graziers in arable districts.

The Hampshire variety of sheep differ widely in this respect, and their lambing season is from five to six weeks later; nor is this singular, when it is considered that the derivation of the breed was by crossing with the native breed, and that the soil is cold and backward upon which

they are usually kept. The Sussex Downs have still numerous advocates, and although they are found in considerable numbers in many counties, yet they are chiefly found upon their native hills in the county of Sussex in all their purity of breed and distinctness of character. I am somewhat inclined to think, that in this district climate alone favours the perpetuation of the breed, for the soil partakes much of the character of the chalk hills of the before-named counties. There is, however, one idea of which the Sussex breeders are peculiarly tenacious, which is, that they can keep a much greater number of Sussex Downs than of the larger variety of Down sheep; I have heard it stated, to the amount of one-third more. But we have good judges, who, after impartial trials and great experience, do not allow more than one in twenty in favour of South Downs. My own opinion, however, is, that the fairest proportion is one in ten, and that will be found an ample allowance in favour of the breed. I must also observe, that the great improvements in the culture, and generally productive state of the land, has been lost sight of in this case; for I must claim the advantage of superior cultivation as imparting to vegetation more nutrition, and, consequently, more capability of sustaining a larger and heavier variety of stock.

I have considered the foregoing observations as necessary in guiding parties who may be commencing stock farming, and assisting those who may be desirous of improving their breeds in different districts. I shall now proceed to treat of the general management requisite at the commencement of the breeding season; having, in previous papers, spoken of the method of keeping the Ewes upon a generous and liberal diet, in order to bring them forward to the ram. I beg to observe, that the rules and manner of proceeding there alluded to will apply upon stock farms, for the management of the out-going, or that portion of the Ewes intended for sale; but for the ordinary breeding stock, it is not necessary to resort to any peculiar or expensive method of feeding; for under ordinary circumstances, the Ewes have their breeding season, which is somewhat peculiar to soil and climate, and which it does not often answer a good purpose to attempt to alter. I should, therefore, say, let them be kept fairly, and in good useful condition, with due variety and regularity in feeding, and the usual advantages of a breeding flock may be expected in return. The first thing to be considered is the selection of rams, either for the improvement of the flock, or for the maintenance of its good qualities; the former is generally, however, considered somewhat easier than the latter. I am aware it is the custom with many ram breeders (who may, possibly, be repaid for extra trouble and attention to their stock), for them to select sheep, and put them to Ewes individually, with the view of one animal correcting defects existing in the other, and which may otherwise be inherited or perpetuated by the offspring. Now, I am well aware, that in large breeding flocks, kept for profitable increase, this would be too tedious and expensive a project. I, therefore, suggest, whilst acknowledging the fact that "like begets like,"

that the improvement of a flock may be well secured by drafting the Ewes previous to turning the ram with them, and dividing them into two or more classes, placing in one class those which may be too kind, or deficient in flesh and bone, and turning with them rams calculated to remedy these defects; and in another class, those which are too coarse and unkind, and select rams for them of an opposite description; whilst a third class may also be formed, with the object of correcting any deficiency in the quality of wool, or other points, which are well known to breeders. This plan possesses great advantages; for the general character of a flock may be soon raised, at a moderate expense, merely by the extra trouble attending the separate keeping and feeding the flock during a period of about six weeks.

JOSEPH BLUNDELL.

(To be continued.)

GAPES, AND THE DISEASES CONFOUNDED WITH IT.

I AM afraid that the readers of the COTTAGE GARDENER are as tired, as, I confess, that I am of the constant discussions that arise from Dr. Horner's criticisms on my medical articles. Dr. Horner's last letter (page 224), in which he states that my experiments, related at page 127, prove the roup to be *not* contagious, shows that we regard medical evidence from points of view so widely different, and the inferences which we draw from the same facts demonstrate that our processes of reasoning are so essentially opposed to one another, that I scarcely think it probable that we shall ever arrive at the same conclusion on any subject whatever. Respecting roup, it is, therefore, useless for me to say more. I have laid the facts with which I am acquainted so fully before my readers, that they may readily draw their own inferences as to its contagious or non-contagious character.

On the subject of Gapes, however, I must be permitted to say a few words; especially as I have not hitherto replied to the numerous remarks of Dr. Horner on my statements.

The discussion has arisen from the confounding of two essentially distinct diseases, namely, Gapes caused by parasitic worms, and Croup, or inflammation of the windpipe. I repeat, two essentially distinct diseases, that could never have been confounded by any person who had closely watched the symptoms of both.

True Gapes is prevalent amongst chickens; whilst Croup usually attacks older fowls. Gapes is common in the spring and summer; Croup is more frequent during wet autumns. I have not seen a case of Gapes for some months; and Dr. Horner is quite safe in asking for specimens of the disease at this season, when it is quite certain he will not get them.

It is well known that croup in children is more prevalent in wet seasons and situations than in those that are dry; and, as might have been expected, croup in fowls was very abundant during the past rainy autumn; many cases, both living and dead, were forwarded to me, and I also had several amongst my own fowls. In all instances I found the disease yield readily to one-twelfth of a grain of tartar emetic, and warm, dry housing. One bird that I killed for examination, during the progress of the disease, exhibited no other morbid indications than a high degree of inflammation of the lining membrane of the windpipe.

I have cases I never for a moment confounded with Gapes, as the manner of breathing in the two diseases is most distinctly marked; in Gapes, as its name implies, the chick is observed to open its mouth at intervals with a decided gape, and a muscular action of the neck, as if it were endeavouring to dislodge something from the throat. In croup, on the contrary, the bird does not gape (strictly speaking), but the mouth is kept more or less open, and there is always either a rattling noise from accumulation of

mucus in the windpipe, or that peculiar metallic trumpet-like sound which is so characteristic of croup in children.

The cases mentioned by Drs. Horner and Ranking were evidently those of croup, or simple inflammation of the windpipe; they are described as occurring in fowls (not in chickens), and as yielding readily to antimonials.

If these gentlemen will patiently wait until the spring, I have no doubt but that they will be able to discover a sufficient number of cases to induce them to modify the assertion that Gapes is only occasionally produced by parasites. I repeat, from extensive experience, and I know numbers of your readers will bear out my assertion, that *true Gapes in chickens is invariably produced by the presence of worms in the windpipe, and that spirit of turpentine, applied either directly, or by fumigation, is the most effective remedy.* At the same time, I am perfectly cognisant of the frequent existence, under other circumstances, of a simple, (and if my unprofessional readers will excuse a technical term) idiopathic inflammation of the mucous lining of the windpipe.

Dr. Horner's assertion, that the presence of parasites "is quite compatible with, yea, perhaps necessary, to health," is certainly one of the most extraordinary I ever met with; and if some professional D'Israeli shall hereafter arise, will stand a fair chance of being embalmed amongst the "curiosities of (medical) literature."

The medical profession are evidently in a state of the most benighted ignorance, for they all regard the presence of tape worms, and the other animals that infest the human body, as causing severe and sometimes fatal disease, and are in the habit of employing the most powerful medicines for their expulsion.

I cannot conclude without returning my thanks to Dr. Anthony for kindly forwarding the drawing of the worm which it would have been impossible for me to have furnished at this season of the year. Into the disagreement between him and Dr. Horner I have no inclination to enter, for I regard personal disputes as exceedingly undesirable in a public journal, and very uninteresting to the readers at large. I have, therefore, in my capacity as a regular correspondent to this journal, often refrained, even when sorely tempted, from entering into a personal discussion with my perpetual antagonist.—W. B. TEGETMEIER, *Willisden, near London.*

GROWING PEAR-TREES ON QUINCE STOCKS.

LIVING, perhaps, in the most favoured locality under the sun for the cultivation of the Pear, viz., the Isle of Jersey, it may not be irrelevant, and I hope will not be considered obtrusive by your talented correspondent, "R. E." if I submit the following remarks to the perusal and attention of your readers. There is so much soundness of argument and apparent good judgment in the article he has written and published in one of your late numbers relative to the comparative value of the free (Pear) and Quince stocks in their application to the purpose of growing this valuable and wholesome fruit, that I dare not say, "we differ in opinion." Nay, I have learned much from his article; he may, possibly, learn something from mine. And, doubtless, it may be observed in the perusal of these lines, that the object it is so desirable to prevent, i.e., too great an extension of the roots, may be realised without having recourse to what I consider the troublesome practice of constantly transplanting the trees, attended with certain loss of time in a large establishment, where much ground is devoted to gardening purposes, and many hands are kept, and altogether incompatible and inconvenient in the management of small gardens.

My friends have been growing Pear-trees on Quince stocks for upwards of forty years, and I have been employed in the same way for the last fifteen. I obtained all the information I could from them, and then applied my own wits to the subject, and I have cause to be much gratified with the result of my practice; and trust I may, having shown the grounds on which I offer my opinions, write confidently and freely on a subject I am so well and

intimately acquainted with; and whilst my experience is limited to this favoured island alone, I have authority for stating that similar practice has produced similar results in many parts of the United Kingdom. In Cornwall, Devonshire, Somersetshire, Hampshire, Essex, Suffolk, and other counties, and I dare to say it may be done generally, where suitable soil and situation is afforded. I, therefore, with due deference to the opinion of "R. E.," "that until the public better understand, or better consider this question, it will be well for those who feel puzzled to grow Pears on the ordinary stock," strongly recommend the Quince stock for the cultivation of the Pear; and whilst advocating and proving its efficiency for the purpose, strongly recommend all persons about to plant Pear-trees to adopt the plan, setting aside all idea and thought

"That he who plants pears,
Plants for his heirs."

In the cultivation of the Pear on the Quince stock, it is necessary, in the first place, to procure good stocks (the Portugal variety is the best, as it grows most vigorously), which, if planted in a suitable soil in the fall of the year, will be fit for budding the ensuing August. By a suitable soil, I mean any soil that is rich, open, and moist, and in a sheltered situation. Should the soil in which it is convenient to plant them be of a stiff, retentive character, and rather dry in its nature (very dry soils in high situations will not suit), I would recommend that it should receive a good dressing of sea-sand, or lime and salt, the saline particles of which retain their moisture, and are of immense benefit to stiff soils, both as to rendering them open, and also in enriching them at the same time, by imparting to them the benefit of the salts they contain.

The stocks being planted, and having made a free and vigorous growth during the first season, I, as far as possible, use the western and south-western sides of the stocks for the insertion of the buds, as the wind is more prevalent in this quarter of the globe from these than from any other points of the compass, the buds are thereby less exposed, and, consequently, less liable to be broken off by the wind. I do not bud until the middle or latter end of August, availing myself, if possible, of an opportunity after rain, as I always find the bark of the stocks run best at such times. I insert the buds within two or three inches of the ground (applying the common T method in the practice), as I find the buds so placed always shoot off much stronger, and upon the first year's growth much of the after success depends. All the varieties do not do equally well on Quince bottoms, but the exceptions are very few. I have subjoined a list of a few of the best varieties, with their styles of growth, and periods of maturing their fruits.

The buds having been carefully put in and tied require no further attention but looking to at the descent of the sap, so as to loosen and remove such ties as require it, and prevent their cutting the bark, paying the penalty of negligence at this period of the plant's growth, the results of which are unsightly carbuncles and disfigurements, from which the plant cannot be afterwards rid, and which often causes stagnation in the flow of the sap, producing canker and irremediable disease.

To this particular point I would call your readers attention—"That unless a Pear-tree budded on a Quince stock is clean and freely grown it is not worth planting." The only chance of succeeding with it, is to plant it a little below the bud, so as to induce it to root in its own wood, thus annulling, to a great extent, the utility of the Quince in bringing it to an early bearing state.

In December, I carefully head the stocks down three inches above the bud, slanting the cut to the northward, so as to carry the wet from the bud; I, at the same time, remove the remainder of the ties. When the buds shoot off in the spring, I tie them carefully up to the upper part of the stock, pinching out the ends of the strongest shoots in the beginning of May: it must not be done later, as it would be useless, not allowing time for the perfection of the young wood, which, if not properly ripened, must be cut away at the next season's pruning.

In the first year's pruning, I cut the shoot or shoots short, the central shoot being left longer than the others, and being careful in pruning the side-shoot or shoots to have an eye to the future formation of the tree, by leaving

the upmost and foreright buds in the right direction. The second year's pruning and growth so far forms the strongest of the trees, that they are prepared to be removed to the position in the ground or garden they are intended to occupy; and as the principal part of the stocks are grown from cuttings, the great disadvantage of strong roots is, and has been, obviated by this means of preparing the stocks, so that the transplanting is attended with very little trouble, and the replanting is rendered equally easy. In the planting, should the ground be moist and rich, I plant the trees at the same depth as they were previously planted and had grown in the quarter; but if, on the other hand, it is rather dry, I plant a little deeper, as I find they do better by being so planted, and roots often proceed from the Pear wood as well as from the Quince. I find old lime-rubbish and cinder-ashes to be excellent materials for dressing the surface with, as they induce the stock to throw out a large quantity of fibrous roots, and they are the alimentary and nutritive organs of the tree, in the fruit-bearing state, during many after years. I generally prune the roots previously to planting, cutting under, and mixing a small proportion of well-rotted manure with the soil in the planting, more particularly so if the ground has not been previously prepared by trenching, &c.

The trees being planted either in rows at ten feet apart either way, over a piece of ground, or round the quarters of a vegetable garden (the usual plan), it is desirable to get as much growth as possible from them during the first two or three years by judicious pruning. This is easily effected; the wood being vigorous, you have only to adopt the plan which is most applicable to your situation, and train the trees accordingly, either as espaliers in the perpendicular and horizontal style of training (by far the best plan for Pears, either in this way or on walls, as it throws them into early and productive bearing), or as pyramidal trees, or as dwarf standard, or Quenouille trees, or as standard, or standard-trained trees, run up on their own wood; in the practice of either of which plans I prune with care until the tree is formed, shortening all the shoots, so as to form fruiting spurs, with the exception of the leading and such shoots as are required to make and maintain the formation and appearance of the tree, which are pruned from nine to twelve inches long. The trees grow spontaneously, and produce abundant crops, which are valuable in these islands as articles of sale,—one hundred *Chaumontelle* Pear-fruit, weighing one hundred pounds weight, readily realizing the handsome sum of £5. It is not unusual to see them so fine; most gardens here produce some such fine fruit, and I once saw a Pear of this particular sort which weighed twenty-three ounces. Smaller fruit of the same sort realize lower but almost proportionate prices, according to their weight and appearance. The other sorts of Pears, being some of them smaller, and produced in much larger quantities, besides being ready for sale when there are larger collections of fruit in the market, are sold at much lower prices, but, nevertheless, make a good return.

The period of the tree's duration in a productive state is from twenty to twenty-five years, requiring to be often renewed after that period; for, having produced quantities of fruit during the preceeding years, and the wood having been constantly spurred back, has become more or less deteriorated. The roots may also be decayed, or have, possibly, got into the cold subsoil, which is not suitable for them. Whichever may be the case, they will, if they have received one-third of the care it is necessary to bestow on free stocks, and have thriven under it, be in no way indebted to their owners, and should be grubbed-out, to be replaced by young trees.

Thus the greatest of all advantages attending growing Pear-trees on Quince stocks are—early and great productiveness; whilst they occupy so small a space of ground that they soon pay for themselves and the space they occupy, besides handing a handsome per centage over to their owners for the little trouble and care necessary to keep them in order. Who would grow Pears on free (Pear stocks) in preference to Quince, when such results may and are realised? My reasoning powers induce me to think, "that to grow Pear-trees in such a way as to last a short and useful space of time, is far better than to take the

chance of growing fruit for futurity;" the risk run in growing them on the free stock.

I subjoin a list of a few of the best and most free-growing varieties, with the periods of the fruit's maturity, which, of course, varies a little according to the seasons, and trust the foregoing article may be interesting and instructive to some of your readers, as well as assist in settling an unsettled question, as wherever a Quince-tree will grow, a Pear-tree may be grown on a Quince stock.

NAME.	STYLE OF GROWTH.	PERIOD OF MATURING FRUIT.
Citron des Carmes	Free	July to August
Windsor	Very Strong	August
Jargonelle	Free	August
William's Bon Chretien	Very Strong	September
Beurrée d'Amaluis	Very Strong	Sept. to Oct.
Graciosi	Strong	October
Louise Bonne of Jersey	Very Free	October
Brown Beurrée	Free	October
Marie Louise	Indifferently	October
Duchesse d'Angoulême	Free	Oct. to Nov.
Duchesse d'Orléans	Strong	Oct. to Nov.
Miel de Waterloo	Free	Oct. to Nov.
*Cressanne	Free	Oct. to Nov.
Beurrée Diel, or Royal	Very Strong	Nov. to Dec.
Napoleon, or Charles d'Autriches	Free	Nov. to Dec.
Glout Morceau	Strong	Nov. to Jan.
Colmar d'Arenberg	Strong	December
*Colmar	Free	Nov. to Dec.
*Passe Colmar	Free	Dec. to Jan.
Chaumontelle	Free	Dec. to Jan.
Knight's Monarch	Free	Nov. to Jan.
Winter Nelis	Free	Dec. to Jan.
Beurrée Dufom	Strong	Jan. to Feb.
Beurrée Rance	Strong	Jan. to March
Easter Beurrée, or Bergamot de la Pentecôte	Indifferent	March to May.
Uvedale's St. Germain, or Belle de Jersey	Strong	Baking or stewing
Glogil	Strong	Ditto ditto

Of the twenty-seven varieties here enumerated, which are all of the best and most useful descriptions in their seasons, there are but two which do not thrive luxuriantly on the Quince stock. The varieties marked with an asterisk require a wall: an eastern or a western aspect suits them well. Many of the other varieties produce finer fruit when placed against walls, but they do not absolutely require it.—C. B. SAUNDERS, *Cesarean Nursery, Jersey.*

THE POUTER PIGEON.

WITH regard to the English Pouter, I believe no fancier ever saw the crop too large, provided it was of the right shape, viz., globular; although large, it is, nevertheless, neat. A large crop, slack-winded, is a great fault; fanciers do not strive to get huge crops in shape like three-cornered-cocked hats; but if they can get them round, they care not how huge they are called, particularly if it has a bib which marks it in the shape of a half-moon, well known to fanciers.

What fancier ever saw a Pouter with too slender a girth? Unfortunately, in some measure, this grand property is lost; fanciers complaining that they have to take both hands to them, whereas formerly, comparatively speaking, to use an old term, the girth would pass through a "wedding ring." The Pouter fanciers are exerting their utmost to restore it, so that the Pouter may appear like a "Tumbler" in hand. The smaller the girth, greater is the contrast given to the beautiful shape of the whole bird.

Above all, what fancier ever saw an English Pouter too long in the legs? It is possible a Pouter may fall short of length of body, or feather, but it is utterly impossible to breed a Pouter with legs too long; the best Pouter fanciers that ever lived have tried at it. Moore, in 1735, says, length of leg, seven inches. Mayor, in 1765, length of leg, some of them wanting a mere trifle of seven inches-and-a-quarter. In our day, "talk is cheap," and we hear of Pouters seven inches-and-a-half in legs. It is one thing to hear and another thing to see. I believe Pouter fanciers will think that I am going too far when I say it is possible, but very improbable, that in England a Pouter might be found that would measure seven-and-a-half inches in the leg; at the same time, I do not believe, in a thousand years they will breed one eight inches in length of leg; even if it was

possible, the legs cannot, by any possibility, be too long. The body, flight, and tail, might be too short.

The epitome of excellence in an English Pouter is made to consist as follows:—

1. Length of body.
2. Length of legs.
3. Neatness of crop.
4. Slenderness of girth.
5. Beauty of feather.

Any combination of three of these properties out of the five in a Pouter, shewn against another, must, if rightly and justly awarded, take the prize; for instance, one Pouter shewn against another, supposing one to take the first three properties, and the other to take the last two, to the former the prize ought to be awarded. It is quite immaterial which of the three properties a Pouter takes out of the five to be awarded the prize; and this will, or ought to prevail, at Metropolitan, Birmingham, and every other Show, if rightly awarded.

If persons prefer Blue Rocks to Almond Tumblers, Skinums to Carriers, or common house Runts to English Pouters, by all means let them do so, but I cannot agree with them, or admire their taste. In all shows, whether agricultural, horticultural, poultry, or pigeon, certain well-defined rules must be clearly laid down, or no judges can act in unison, or give satisfaction.—JOHN MATTHEWS EATON, 7, Islington Green, London.

EASY MODE OF EXCLUDING FROST.

It may interest some of your readers, who, like myself, have only a cold pit or frames for preserving half-hardy plants during winter, to know that I succeeded last year in keeping out frost by burning one or two floating night lights* under a plate of iron, about a foot in diameter, supported about an inch above the flame, which I found radiated sufficient heat for the purpose. I used *castor oil* (costing, wholesale, about 4d. per pound), which is so free from smell, and burns so purely, that I have used it in a sick room for three months, and at present burn it all night in my bedroom.

I did not observe any injurious effect from gases generated by the lamp, such as you seemed to fear in your reply to "J. S. K.," page 192; but if this were found to be the case, the lamp could be burned in a close iron box, and the fumes carried off in a small pipe.—A. D. A.

[The suggestion at the conclusion of this communication obviates our objection. The iron box might be made like a gas stove, with a tube passing the whole length of the pit, so that scarcely any heat would be lost. There need be no door to the box, but the bottom be made to take on or off in the manner of a pill-box lid.—ED. C. G.]

SEA WEEDS.

(Continued from page 15.)

DASYA.—Ag.

"FROND filamentous; fructification two-fold on distinct plants—1, ceramidia, containing a tuft of pear-shaped spores; 2, lanceolate pods (stichidia), containing tetra-spores ranged in transverse bands."—Harvey. Name signifying hairy.

1. *DASYA COCCINEA* (Scarlet).—Stems rather thick and hairy, branched, the branches twice winged. This is one of our most lovely sea plants; the colour varying from pale pink, in the early stages of its growth, to bright rosy-scarlet, and then to deep crimson-brown. In this last state it does not adhere well to paper. It is a summer plant, and annual.

2. *D. OCELLATA* (Eyed).—This lovely little thing is found on rocks covered with mud, near low-water mark. It is rare, though Mrs. Griffiths has found it abundantly on the pier at Torquay. It is in little tufts only one or two inches high. The minute branches at the tips of the fronds are so crowded that the plant looks something like a tuft of

little brownish-red feathers, with eyes; hence its name (*ocellata*).

3. *D. ARBUSCULA* (Shrubby).—"The stems much branched." They vary from two to four inches in height, are of a red-brown, and the substance rather soft. "Not uncommon on the shores of Ireland and Scotland."—Harvey.

4. *D. VENUSTA* (Lovely).—I have never had the pleasure of seeing this plant. Harvey speaks of it as cast on shore in summer, and found in Jersey by Miss White and Miss Turner. "Annual. Very rare. Stem 3—4 inches high, as thick as a hog's bristle, bare of ramuli, but all the branches and their divisions clothed with very slender, hair-like, single-tubed ramuli. Colour a fine rose-red; substance very flaccid and tender; closely adhering to paper. A beautiful species."—Harvey.

ORDER 8.—LAURENCIACEÆ.

"Rose-red or purple Sea Weeds."—Harvey.

1. BONNEMAISONIA.—Ag.

Named after M. Bonnemaïson.

BONNEMAISONIA ASPARAGOIDES (Asparagus-like).—A very



beautiful weed, growing on rocks. The frond is from four to twelve inches long, and much branched; the branches alternate, with little slender ramuli. The colour, when cast on shore, a fine scarlet, or rather rose, becoming darker, or crimson, in drying. Harvey remarks that "those plants of *B. asparagoides* found in the west of Ireland are darker, and also become darker in drying; while in those which are from the east coast of Ireland and south of England the colour fades in drying." I have observed this tendency to fade in Scotch specimens also. The most beautiful specimens I have seen, as regards colour, were some which I found on the Northumberland coast at Bamborough, opposite the Farn Islands. It was really a very pretty sight to see them come floating in with the advancing tide, and I watched and waited long that none might escape me, as they were not very plentiful, and it was only on that one day that I found them. It is a summer plant, and annual. The specimen from which our plate is taken is from Ireland, and rich in capsules, which contain a tuft of spores.

2. LAURENCIA.

Name in honour of M. de la Laurencie.

1. *LAURENCIA PINNATIFIDA* (Deeply-lobed).—This plant is also annual, and grows on rocks. It is common and very

* The best are German manufacture, a wick inserted in a thin slice of cork, and cost only 6d. for a large box.

variable in its appearance—sometimes of a yellow-green, at others brown or purple. The fronds are from one to twelve inches high; substance cartilaginous. "It has a hot, biting taste, and in Scotland is called Pepper dulse."

L. CESPITOSA (Tufted).—Frond roundish-winged, pyramidal; ramuli numerous, often crowded, tapering to the base. Growing on stones. Annual. Summer. Common. Colour dark purple—sometimes, when exposed to the sun, greenish-yellow.

3. L. OBUSA (Blunt).—Parasitic on large algæ. Annual. Not uncommon in England and Ireland, but more so in Scotland. The substance is tender, and the plant soon breaks into pieces if left long in fresh water. The fronds are tufted, rather crowded, from three to six inches long. I have specimens from the Cumberland coast, and one from *Jaffa*!

4. L. DASYPHYLLA (Hair-leaved).—"Frond filiform, irregularly branched; ramuli short, club-shaped, obtuse, very much attenuate at base; colour pale pink."—*Harvey*.

5. L. TENUISSIMA (Thinnest).—On rocks and algæ. Very rare. Colour pale purple, or red.

3. CHRYSYMENIA.—*J. Ag.*

1. CHRYSYMENIA CLAVELLOSA (Club-spotted).—The frond of this delicate and lovely weed is gelatinous, and from three to twelve inches high, very much branched, and of a beautiful crimson-pink. When placed in fresh water for a time it assumes a yellow or orange tint, whence its generic name, from two words, signifying golden and a membrane. It is not very common, but I have frequently had it from the Isle of Man, through the kindness of my friend, Miss Heslop.

2. C. ORCADENSIS (Orkney).—"At Skail, Orkney, Miss Watt. The specimens yet seen of this supposed species are insufficient to establish its character fully."—*Harvey*.

4. CHYLOCLADIA.—*Grev.*

"Frond tubular, constricted at regular intervals, and divided into chambers. Name from two words, signifying juice and a branch."

1. CHYLOCLADIA OVALIS (Oval).—On rocks, sometimes on other algæ. An annual, and not uncommon on the English and Irish shores. From two to ten inches high; cartilaginous; the branches set with oval ramuli of a purplish colour.

2. C. KALIFORMIS (Kali-shaped).—The substance is gelatinous, and the form that of a tube constricted at intervals, with the branches in whorls. Fronds from four to eighteen inches long; colour purplish-red, often a pale greenish-yellow. Frequent on rocks and algæ.

3. C. REFLIXA (Bent-back).—Frond of a purple colour, and membranaceous. The lower branches are arched, and attach themselves by short processes. This plant is very rare. A specimen I have from Mrs. Ralfs is the only one I have seen. It has been found near Ilfracombe.

4. C. PARVULA (Little).—A parasite on the smaller algæ. Gelatinous and slender; colour a fine red.

5. C. ARTICULATA (Jointed).—Like the preceding, this plant springs from a tuft of fibres. It is very much branched and bushy; colour a pink-red, and the frond filled with thin gelatine. S. B.

(To be continued.)

POULTRY NOTES.

DISEASED PIGEONS.

A CORRESPONDENT wished to know how to treat the disease termed "going light," when Pigeons are ill, moping about inanimate, and gradually wasting away. I have always found fat of some sort to be an excellent restorative; for instance, a few pills of fresh butter, suet, or pork-fat, about the size of a pea, put down their throats on alternate days, a few times; and, if practicable, allow them to run in the garden. Though Pigeons are not carnivorous, I have known some exceedingly fond of ham-fat, which they devoured greedily, and apparently much to their well-being.

Your correspondent seems to doubt the fact that Pigeons

are fond of green food. I am well aware that those that have never had an opportunity of pecking about in a garden, and are, consequently, ignorant of such food, will necessarily express no fondness for salad; but Pigeons are, nevertheless, naturally very fond of some plants, such as young peas, lettuces, savoys, cabbage, and the young tops of Swede turnips. Rough-leaved plants, such as mustard and white turnips, they reject.

SPANGLED HAMBURGH FOWLS.

IN giving the Lancashire Rules for judging the Pheasant Fowls, or, as you call them, Spangled Hamburgs, I beg to say it is a mistake to call those therein named Creels, Silver Pencilled, for by carefully reading that rule you will find them to be what I suspect you would condemn as bad Silver Spangled; they are, in other words, White-necked Silver Pheasants; their difference from the Moon Pheasants consists in their having white necks and breasts; and the black markings being simply designated spots, not moons, the Moon Pheasants having dark markings in their hackles, and moons (round spots) on their breasts; thus you will perceive there are four classes of Pheasant Fowls, or Spangled Hamburgs, Golden Pheasants, Copper, or Red Moon Pheasants, Creels, or Silver Pheasants, and Silver Moon Pheasants. Now, as no Poultry Book, that I have seen, has collected all the rules for judging these varieties, consequently, a judge that prefers, or, perhaps, only knows one, may be excused for having a predilection when both are shown in one class.

COMBS OF DORKINGS.

I FEAR my remarks on the combs of Dorkings, published some time back, were misunderstood. When I said they ought to be Rose-combed, I meant the old Dorkings of white plumage, the fowls originally bred at Dorking, in Surrey. The single-combed birds that occasionally appear among them, I believe to arise from the practice formerly so frequent of crossing with a game cock to improve a worn-out stock. The Grey, I am aware, may be either single, cupped, or rose-combed, according to the pleasure of the breeder, but as these are descended from the old Sussex fowl, I do not consider them as true Dorkings, even though they have generally assumed the name.

CHICKENS FROM PULLETS & COCKERELS.

YOU wished to know the sex of chickens bred from birds of the preceding year. My Shanghaes, from a cockerel of Anster Bonns, hatched in March, 1852, and pullets of April and May, of the same year, have produced as follows:—First broods, thirty-three chicken, sixteen cockerels, and seventeen pullets; second broods, twenty-five chicken, seven cockerels, and eighteen pullets.

ROUP.

THE various discussions on this malady of the poultry-yard, concerning its contagion, or non-contagion, appear rather to have passed the bounds of amity. I believe there is some truth on both sides, thus—influenza, or any cold, is at once set down as Roup; and it is here, I think, the error originates.

Putrid Roup I consider similar to glanders in horses, and very contagious; still I am inclined to believe, that even were a roup fowl placed in a healthy run, and clean, airy fowl-house, where there was no predisposing cause, the contagion might not spread, so powerful are circumstances; but I should, by no means, like to try the experiment with valuable fowls.—B. P. BRENT, *Bessels Green, Sevenoaks*.

POULTRY EXHIBITIONS.

CORNWALL POULTRY EXHIBITION.—This was held in the Corn Market, Penzance, on the 27th and 28th of December. The following is the

PRIZE LIST,

in reading which it should be borne in mind, that where two classes exist for the same breed of fowl, the first-mentioned

are birds above a year old, and the last those hatched in 1853.

SPANISH.—Second prize, Mr. J. Fox, Rosevale, Penzance. Ditto.—Second prize, Mr. W. Lawrence, Rosemoran.

COLOURED DORKINGS.—First prize, G. Williams, Esq., Trevine. Ditto.—First prize, G. Williams, Esq., Trevine. Second prize, W. Bolitho, Esq., Chyandour.

WHITE DORKINGS.—Second prize, A. Smith, Esq., Scilly. Ditto.—First prize, A. Smith, Esq., Scilly. Second prize, ditto.

BUFF AND CINNAMON SHANGHAES.—First prize, Mr. W. Lawrence, Rosemoran. Second prize, Mr. J. R. Branwell, Penzance. Ditto.—First prize, Rev. W. W. Wingfield, Gulval. Second prize, Mr. T. Gittus, Goldsithney, and Mr. Welch, Penzance.

BROWN AND PARTRIDGE-FEATHERED SHANGHAES.—Second prize, Mr. T. Gittus, Goldsithney. Ditto.—First prize, Mr. E. Burton, Truro.

WHITE SHANGHAES.—Second prize, Mr. W. Lawrence, Rosemoran. Gulval. Ditto.—First prize, Rev. W. W. Wingfield, Gulval. Second prize, Mr. W. Lawrence, Rosemoran.

MALAYS.—First prize, Mr. Thomas Mayne, Penzance.

GAME FOWL.—First prize, E. H. Rodd, Esq., Penzance. Second prize, Rev. W. W. Wingfield, Gulval. Highly commended, ditto. Ditto.—First and second prizes, Rev. W. W. Wingfield, and P. Grenfell, Esq.

GOLDEN-PENCILLED HAMBURGH.—Second prize, P. Grenfell, Esq., Gulval (young birds).

SILVER-PENCILLED HAMBURGH.—Second prize, P. Grenfell, Esq., Gulval. Ditto.—Second prize, P. Grenfell, Esq.

SILVER-SPANGLED HAMBURGH.—Second prize, P. Grenfell, Esq. Ditto.—Second prize, Mr. E. Burton, Truro.

POLANDS (Black with white crests).—Second prize, Mr. J. Fox, Rosevale.

GOLDEN POLANDS.—First prize, Mr. E. Burton, Truro. Ditto.—First prize, Mr. E. Burton, Truro.

SILVER POLANDS.—Second prize, G. Williams, Esq., Trevine. Ditto.—Second prize, Mr. J. Fox, Rosevale.

POLANDS (Any other variety).—First prize, Mr. Lawrence, Rosemoran.

BANTAMS.—First prize, G. Williams, Esq. (Silver-laced). First prize, Mr. E. Burton, Truro. (White.)

GEES.—First prize, Rev. W. W. Wingfield, Gulval. Second prize, G. Williams, Esq. Third prize, Mr. H. Trembath, junr., Bosereage, Gulval. Ditto.—First prize, Rev. W. W. Wingfield, Gulval. Second prize, ditto.

WHITE AYLESBURY DUCKS.—First prize, J. S. Bedford, Esq., Pendrea. First prize, Mr. E. Burton, Truro. (Young birds.)

ROUEN DUCKS.—First prize, Rev. W. W. Wingfield. Second prize, T. S. Bolitho, junr., Esq., Penalverne, Penzance.

DUCKS (Any other variety).—First prize, J. S. Bedford, Esq., Pendrea. Second prize, A. Smith, Esq., Scilly.

TURKEYS.—First and second prizes, G. Williams, Esq., Trevine. Ditto.—First prize, G. Williams, Esq.

PIGEONS.—First prize, Mr. E. Burton, Truro (Black Carriers); ditto, ditto (White Pouters); ditto, ditto (Buff Jacobines); ditto, ditto (Yellow-shouldered Turbids, crested; ditto, ditto (Silver Owls). First prize, Mr. J. Fox, Rosevale (Nuns); ditto, ditto (Fawn Tumblers). First prize, G. Williams, Esq., Trevine (Runts); ditto, ditto (Almond Tumblers). First prize, Rev. W. W. Wingfield (Fantails); ditto, ditto (Archangels). First prize, Rev. T. Phillpotts, Portgwithden (Trumpeters). Highly commended.—Rev. W. W. Wingfield (Runts); Mr. C. Ellis, Hayle (Fantails); Mr. E. Burton, Truro (Silver Turbids); Rev. W. W. Wingfield, Gulval (Nuns); and Mr. E. Burton, Truro (Nuns). Commended.—Mr. H. Baynard (White Fantails); Mr. E. Burton, Truro, ditto; Mr. J. Fox, Rosevale (White Jacobines); ditto (Trumpeters); ditto (Owls); and Mr. E. Burton, Truro, (Almond Tumblers).

EXTRA STOCK.—First prize, W. Bolitho, Esq., Chyandour (Peacock and Hen). First prize, Rev. W. W. Wingfield, Gulval (coloured Call Drake and Duck). First prize, E. H. Rodd, Esq., Penzance (Cock and two Hens, common Pheasants).

Some notes promised on this Exhibition have not yet reached us.

HONITON AND EAST DEVON POULTRY EXHIBITION.—The Second Annual Exhibition of the Honiton and East Devon Association for the Improvement of Domestic Poultry was held at Honiton, on Wednesday and Thursday, the 28th and 29th December, in the Market House and Poultry Market adjoining, which had been covered in with glass, and fitted up for the occasion, and everything done to render it comfortable for the birds and commodious for the visitors. The weather, unfortunately, was very unpropitious, a heavy snow-storm having fallen on the day previous to the Show, followed by a severe frost, which deterred many from visiting the Exhibition. But, notwithstanding, the attendance was very good on the first day, and on the second the numbers were largely increased. 418 pens of birds were entered for competition, and the quality of the classes, with the exception of one or two, was such as has rarely been brought together at any Provincial Show.

The Pen of *Spanish*, which took the first prize in class 1, contained hens of surpassing excellence; and the Cock-erel in the first prize pen of Class 2 was a bird of considerable merit. The *Coloured Dorkings* were particularly fine. The *Cochin-Chinas* were, as usual, the most numerous. The Buff Chicken class was, however, the centre of attrac-

tion, as it contained the rival pens of Captain Snell, of London, and Mr. Channing, of Heavitree; the former gentleman having, through the local papers, challenged his birds against those of all the amateurs in Devon and Cornwall, which was accepted by the latter. The pens exhibited by both gentlemen were unusually fine, and although Capt. Snell carried off the palm, Mr. Channing may well be proud of his birds; and many of the other pens in this class were of sufficient merit to have secured for them a prize at almost any local Show. The *Malays* were a very good class, and showed that in spite of the favour which their more recently imported neighbours have enjoyed, they still retain some kind patrons and friends. The Birmingham Prize birds, "Wallace" and "Lord Lilliput," appeared in this class.

The *Game Fowls*, in all their varieties, were admirably represented, particularly in the Chicken class.

The *Hamburghs*, with their gay and varied plumage, were, in all their classes, of great merit.

The *Polands* were few in number, and, with the exception of two or three pens, not remarkable either for size or beauty.

The *Turkeys*, *Geese*, and *Ducks* were all good, particularly the latter. In the *Aylesbury* class the competition was unusually severe.

The *Buntams* comprised almost every variety, and were well represented, and among them was a pen of *Silky Japan Fowls*.

The *Pigeons* were numerous, and, from their beauty and rarity, formed a very interesting part of the Exhibition.

The prizes for Dead Poultry were a new feature. The entries were, however, comparatively few, and the poultry not of first-rate quality. The Exhibition closed at four o'clock in the afternoon of Thursday, and, with very few exceptions, the birds were dispatched to their respective homes the same evening. The Judge was E. Hewitt, Esq., Sparkbrook, near Birmingham.

The following is a list of the awards:

SPANISH.—Class 1.—Cock and two Hens. (8 pens.) 8. First prize, James E. Marshall, Belmont, Taunton, Somerset. 1. Second prize, Boughton Kingdon, Upper Paul-street, Exeter. (Whole class meritorious.) Class 2.—Cock and two Pullets, chicken of 1853. (12 pens.) 10. First prize, Miss Dyott, 2, Torwood Mount, Torquay, Devon. 11. Second prize, W. J. Square, 14, Portland Square, Plymouth.

DORKING (COLOURED).—Class 3.—Cock and two Hens. (9 pens.) 21. First prize, J. F. Pearce, Lower Sleuton, Whimble, Devon. 26. Second prize, Mrs. Brunel, Watcombe, Torquay, Devon. Class 4.—Cock and two Pullets, chicken of 1853. (19 pens.) 31. First prize, J. R. Rodbard, Aldwick Court, Wrington, Bristol. 40. Second prize, J. H. Townsend, Ashfield, Honiton, Devon.

DORKING (WHITE).—Class 5.—Cock and two Hens. (4 pens.) 50. First prize, C. Edwards, Brislington, Bristol. 51. Second prize, Miss Wilcox, Nailsea Court, Bristol. Class 6.—Cock and two Pullets, chicken of 1853. (2 pens.) 52. First prize, Miss Fanny Patteson, Feniton Court, Honiton, Devon. (Second prize withheld.)

COCHIN-CHINA (CINNAMON AND BUFF).—Class 7.—Cock and two Hens. (13 pens.) 54. First prize, W. L. Channing, Heavitree, Exeter. 62. Second prize, Cyrus Clark, Street, Glastonbury, Somerset. Class 8.—Cock and two Pullets, chicken of 1853. (32 pens.) 92. First prize, Capt. Snell, St. Swithin's Lane, London. 91. Second prize, W. L. Channing, Heavitree, Exeter. (The whole class highly meritorious.)

COCHIN-CHINA (WHITE).—Class 9.—Cock and two Hens. (6 pens.) 102. Second prize, F. J. Coleridge, The Cottage, Ottery St. Mary, Devon. (The first prize withheld.) Class 10.—Cock and two Pullets, chicken of 1853. (4 pens.) 108. First prize, Cyrus Clark, Street, Glastonbury, Somerset. 107. Second prize, James Turner, Northbrook, Exeter.

COCHIN-CHINA (BLACK, BROWN, AND PARTRIDGE).—Class 11.—Cock and two Hens. (4 pens.) 109. First prize, Miss Dyott, 2, Torwood Mount, Torquay, Devon. (Black.) 110. Second prize, Mrs. Madge, Gittisham, Honiton, Devon. (Partridge.) Class 12.—Cock and two Pullets, chicken of 1853. (19 pens.) 125. First prize, Capt. Snell, St. Swithin's Lane, London. (Partridge.) 124. Second prize, Thomas Bridges, Croydon, Surrey. (Partridge.)

MALAY.—Class 13.—Cock and two Hens. (6 pens.) 132. First prize, Charles Ballance, 5, Mount Terrace, Taunton, Somerset. 135. Second prize, William Manfield, Dorchester. Class 14.—Cock and two Pullets, chicken of 1853. (6 pens.) 138. First prize, Charles Ballance, 5, Mount Terrace, Taunton, Somerset. 140. Second prize, Edmund Stamp, Honiton, Devon.

GAME.—Class 15.—Cock and two Hens. (16 pens.) 145. First prize, J. R. Rodbard, Aldwick Court, Wrington, Bristol. 156. Second prize, Charles Edwards, Brislington, Bristol. (The whole class meritorious.) Class 16.—Cock and two Pullets, chicken of 1853. (12 pens.) 168. First prize, J. F. Mortimer, Mill-street, Plymouth, Devon. 170. Second prize, Edmund Timms, Stoke Bishop, Bristol. (The whole class unusually meritorious.)

GOLDEN-PENCILLED HAMBURGH.—Class 17.—Cock and two Hens. (9 pens.) 172. First prize, Mrs. Devenish, Honiton, Devon. 175. W. W. Rowe, Milton Abbot, Tavistock, Devon. Class 18.—Cock and two Pullets, chicken of 1853. (6 pens.) 181. First prize, Miss F. Patteson, Feniton Court, Honiton, Devon. 185. Second prize, Charles Hoxley, Norwood House, Honiton, Devon.

GOLDEN-SPANGLED HAMBURGH.—Class 19.—Cock and two Hens. (9 pens.) 195. First prize, Charles C. Templer, Bridport, Dorset. 192.

Second prize, Charles C. Templer, Bridport, Dorset. *Class 20.*—Cock and two Pullets, chicken of 1853. (8 pens.) 198. First prize, W. K. Sprague, The Quarry, Paignton, Devon. 201. Second prize, C. C. Templer, Bridport, Dorset. (An exceedingly good class.)

SILVER-PENCILLED HAMBURGH.—*Class 21.*—Cock and two Hens. (7 pens.) 204. First prize, F. H. Aberdein, Honiton, Devon. 208. Second prize, W. W. Rowe, Milton Abbot, Tavistock, Devon. *Class 22.*—Cock and two Pullets, chicken of 1853. (6 pens.) 212. First prize, F. H. Aberdein, Honiton, Devon. 211. Second prize, Miss F. Patteson, Feniton Court, Honiton, Devon.

SILVER-SPANGLED HAMBURGH.—*Class 23.*—Cock and two Hens. (9 pens.) 222. First prize, C. C. Templer, Bridport, Dorset. 221. Second prize, Charles Edwards, Brislington, Bristol. (The whole class well represented.) *Class 24.*—Cock and two Pullets, chicken of 1853. (9 pens.) 230. First prize, Frank Page, Tor, Torquay, Devon. 232. Second prize, C. C. Templer, Bridport, Dorset.

BLACK POLAND (WITH WHITE CRESTS).—*Class 25.*—Cock and two Hens. (3 pens.) 236. First prize, James P. Hine, Thickthorn, Ilminster, Somerset. 237. Second prize, James Newick, Hinton St. George, Ilminster, Somerset. *Class 26.*—Cock and two Pullets, chicken of 1853. (3 pens.) 239. Second prize, Henry Hine, Bedford Brewery, Plymouth, Devon. (First prize withheld.)

GOLDEN POLAND.—*Class 27.*—Cock and two Hens. (3 pens.) 243. First prize, Robert H. Bush, Liffield House, Clifton, Bristol. (Second prize withheld.) *Class 28.*—Cock and two Pullets, chicken of 1853. (5 pens.) 248. First prize, Cyrus Clark, Street, Glastonbury, Somerset. 246. Second prize, Charles Edwards, Brislington, Bristol.

SILVER POLAND.—*Class 29.*—Cock and two Hens. (3 pens.) 251. First prize, Cyrus Clark, Street, Glastonbury, Somerset. 249. Second prize, W. W. Rowe, Newton Abbot, Tavistock, Devon. *Class 30.*—Cock and two Pullets, chicken of 1853. (3 pens.) 252. First prize, Charles E. Coleridge, Eton College. 253. Second prize, Charles Edwards, Brislington, Bristol.

BANTAMS (GOLD AND SILVER-LACED).—*Class 31.*—Cock and two Hens. (10 pens.) 258. First prize, Joseph Goodenough, Godmanstone, Dorset. 260. Second prize, J. G. Gully, Queen-street, Exeter.

BANTAMS (BLACK, WHITE, AND ANY OTHER VARIETY).—*Class 32.*—Cock and two Hens. (18 pens.) 282. First prize, William Connott, 270, Hight-street, Exeter. 281. Second prize, William Connott, 270, Hight-street, Exeter.

TURKEYS.—*Class 33.*—Cock and one Hen. (13 pens.) 291. First prize, Charles Edwards, Brislington, Bristol. 285. Second prize, Mrs. Griffin, Holmsley Farm, Monkton, Honiton, Devon. (Competition good.)

GESE.—*Class 34.*—Gander and one Goose. (5 pens.) 296. First prize, Thomas Valentine, Upottery, Honiton, Devon. 300. Second prize, W. W. Rowe, Milton Abbot, Tavistock, Devon.

DUCKS (WHITE AYLESBURY).—*Class 35.*—Drake and two Ducks. (18 pens.) 311. First prize, W. W. Rowe, Milton Abbot, Tavistock, Devon. 318. Second prize, Miss Wilcox, Nailsea Court, Bristol.

DUCKS.—*Class 36.*—Drake and two Ducks. (10 pens.) 322. First prize, T. J. Bremridge, Penrose Villa, Heavitree, Exeter. 326. Second prize, W. W. Rowe, Milton Abbot, Tavistock, Devon.

PIGEONS.—*Class 37.*—Carriers. (7 pens.) 329. W. L. Channing, Heavitree, Exeter. *Class 38.*—Tumblers. (4 pens.) 336. W. L. Channing, Heavitree, Exeter. 339. Commended, J. B. Chune, Coalbrookdale, Salop. *Class 39.*—Nuns. (8 pens.) 341. W. L. Channing, Heavitree, Exeter. *Class 40.*—Archangels. (3 pens.) 350. J. B. Chune, Coalbrookdale, Salop. *Class 41.*—Jacobines. (5 pens.) 353. W. L. Channing, Heavitree, Exeter. *Class 42.*—Fantail. (9 pens.) 361. Charles Edwards, Brislington, Bristol. *Class 43.*—Runts. (2 pens.) 365. Rev. E. E. Coleridge, Bucknell Vicarage, Honiton, Devon. *Class 44.*—Any other variety. (21 pens.) 367. J. B. Chune, Coalbrookdale, Salop. (Australian Pouter.) 366. Highly commended.—Charles Bluet, Taunton, Somerset. (Magpies.)

DEAD POULTRY.—*Class 45.*—Turkey. (5 entries.) 399, and 390. First and second prizes, Mrs. Griffin, Holmsley Farm, Monkton, Honiton, Devon. *Class 46.*—Cockerels. (6 entries.) 397. First prize, Wm. Brown, Red Gate Farm, Shute, Devon. 394. Second prize, Mrs. Vern, Upton Cottage, Payenhury, Devon. 396. Highly commended.—James Cousey, Homlet, near Honiton, Devon. *Class 47.*—Pullets. (4 entries.) 401. First prize, Dr. Rogers, Honiton, Devon. 400. Second prize, Mrs. Banfield, Wadhways Farm, near Honiton, Devon. *Class 48.*—Goose. (5 entries.) 404. First prize, Clement Griffin, Luppitt, Devon. 406. Second prize, Thomas Griffin, Luppitt, Devon. *Class 49.*—Ducks. (3 entries.) 409. First prize, Clifford Shirreff, Yardbury, Colyton, Devon. 410. Second prize, Thomas Griffin, Luppitt, Devon.

SALISBURY AND WESTERN COUNTIES.—This took place on the 5th and 6th instant. Very great credit is due to the Honorary Secretary for the success attending it. The birds were exceedingly well attended to, and the rooms of the Council Chamber afforded a well-lighted and comfortable arena. Mr. Andrews, of Dorchester, was to have been one of the Judges, in conjunction with Mr. Hinxman, of Durnford House, but being absent, unavoidably, his place was supplied by Mr. Higgs, of Southampton. The Silver Cup, we suppose, will be given to Mrs. Mills, as the winner of the greatest number of first prizes. *Spanish* fowls were indifferently represented; *Coloured Dorkings* were better, and *White Dorkings* were most excellent. Mrs. Mills exhibits birds in this class which in stoutness are seldom equalled. In *Shanghaes*, or *Cochin-Chinas*, the Bufts and Browns were good and numerous; but there were only three pens of White, and the same number of Black. *Malays* were moderate; *Game* but little better; and all the *Hamburgh* classes were below an average. The *Polands* were few, but some good birds were among them. In the *Cross-breeds*, the

chickens of Mr. Fookes fully realize what we have advocated as the result of a union between the *Shanghae* and *Dorking*—the breasts were largely developed. The *Bantams* were all indifferent. The *Geese* most excellent; those which took the first prize weighed 21 lbs. each, and those to which the second was awarded weighed 19 lbs. *Ducks* of all the classes were good, and the *Turkeys* were still more superior. In the class for any *distinct variety*, the *White Polands* of Mrs. Assheton Smith were very superior, and in admirable condition. In *Class 51*, the *Crow* fowls, we think, are only bad black *Game* fowls, but Miss Bathurst's *Silk Fowls* were of the best we ever saw.

The following is a list of the Prizes :

SPANISH.—*Class 1.*—Exceeding one-year-old. 6. First prize, Mr. T. Pain, Salisbury. 2. Second prize, Mr. James Crane, jun., Tolpuddle, Dorset. Age, two years.

SPANISH.—*Class 2.*—Chickens of 1853. 17. First prize, Mr. P. P. Cother, Salisbury. Cockerel hatched May 20, 1853; pullets, June 20. 16. Second prize, Mr. Clark, Hartley Row.

DORKING (COLOURED).—*Class 3.*—Exceeding one-year-old. 23. First prize, Mrs. Finch Noyes, Laverstock. 26. Second prize, Mr. Jos. Symonds, Gorwell, near Dorchester. Age, one year six months.

DORKING (COLOURED).—*Class 4.*—Chickens of 1853. 32. First prize, Mrs. Finch Noyes, Salisbury. 31. Second prize, Mr. R. Genge, Wotwater, near Dorchester.

DORKING (WHITE).—*Class 5.*—Exceeding one-year-old. 46. First prize, Mrs. Mills, Bisterne. 47. Second prize, ditto.

DORKING (WHITE).—*Class 6.*—Chickens of 1853. 52. First prize, Mrs. Besant, Milborne St. Andrews, Dorset. Age, seven months. 51. Second prize, Mr. W. Fookes.

COCHIN-CHINA (CINNAMON AND BUFF).—*Class 7.*—Exceeding one-year-old. 56. First prize, Mr. James Crane, jun., Tolpuddle, Dorset. 54. Second prize, Mr. F. T. Kelsey, Lavington House, Devizes.

COCHIN-CHINA (CINNAMON AND BUFF).—*Class 8.*—Chickens of 1853. 64. First prize, Mr. W. Flight, Winchester. Age, seven months. 66. Second prize, Mr. H. Fooks, Whitechurch, Blandford. Age, cock, seven months; pullets, nine ditto.

COCHIN-CHINA (BROWN AND PARTRIDGE FEATHERED).—*Class 9.*—Exceeding one-year-old. 81. Second prize, Mr. Woodcock, Fugglestone.

COCHIN-CHINA (BROWN AND PARTRIDGE FEATHERED).—*Class 10.*—Chickens of 1853. 91. First prize, Mr. Wm. Cave, Hartley Row, Hants. Age, seven months. 85. Second prize, Mr. Edwards, Lyndhurst Station. Age, nine months.

COCHIN-CHINA (WHITE).—*Class 11.*—Exceeding one-year-old. 93. Second prize, Mr. Flight, Winchester.

COCHIN-CHINA (WHITE).—*Class 12.*—Chickens of 1853. 94. First prize, Mr. Flight, Winchester. 95. Second prize, Mr. T. Lyne, Malmesbury.

COCHIN-CHINA (BLACK).—*Class 13.*—Birds exceeding one-year-old. 96. Second prize, Mrs. Mills, Bisterne.

COCHIN-CHINA (BLACK).—*Class 14.*—Chickens of 1853. 97. First prize, Mr. Flight, Winchester. 98. Mr. Lyne, Malmesbury.

MALAY.—*Class 15.*—Birds exceeding one-year-old. 102. First prize, Mr. Woodcock, Wilton. 103. Second prize, Mr. C. Coles, Fareham.

MALAY.—*Class 16.*—Chickens of 1853. 105. First prize, Mr. Dawkins, Salisbury. 104. Second prize, Miss Lewis, Martyr Worthy, Winchester. Age, seven months.

GAME FOWL (WHITE, PILES, DUCKWINGS, AND GREYS).—*Class 17.* Birds exceeding one-year-old. 111. First prize, Mr. Mundy, Winchester. (Duckwing.) 113. First prize, Mr. Blake, Castle-street, Salisbury. 108. Mr. Thos. Hall, Newport, Isle of Wight. (Duckwing.)

GAME FOWL (WHITE, PILES, DUCKWINGS, AND GREYS).—*Class 18.* Chickens of 1853. 118. Second prize, Mr. Mundy, Winchester. (Duckwing.) Age, nine months.

GAME FOWL (BLACK-BREASTED AND OTHER REDS).—*Class 19.*—Exceeding one-year-old. 121. Second prize, Mr. Thomas Hale, Newport, Isle of Wight.

GAME FOWL (BLACK-BREASTED AND OTHER REDS).—*Class 20.*—Chickens of 1853. 125. First prize, Mr. T. Hale, Newport, Isle of Wight. Red. Second prize, Mr. J. Stratton, Bodenham. Age, Cock, nine months; Pullets, seven ditto.

GOLDEN-PENCILLED HAMBURGH.—*Class 21.*—Exceeding one-year-old. 128. First prize, Mr. T. P. Mew, Cowes, Isle of Wight. 127. Second prize, Mr. Robert Fookes, Milton Abbas, Blandford. Age, twenty-one months.

GOLDEN-PENCILLED HAMBURGH.—*Class 22.*—Chickens of 1853. 131. Second prize, Mr. R. Fookes, Milton Abbas. Age, six months.

GOLDEN-SPANGLED HAMBURGH.—*Class 23.*—Exceeding one-year-old. 134. First prize, Mr. T. P. Edwards, Lyndhurst. 132. Second prize, Mr. Genge, Waterson, Dorset.

SILVER-PENCILLED HAMBURGH.—*Class 25.*—Exceeding one-year-old. 138. First prize, Mr. N. Antill, Portsoken. 142. Second prize, Mr. Chambers, Portsmouth.

SILVER-PENCILLED HAMBURGH.—*Class 26.*—Chickens of 1853. 144. First prize, Mrs. Mills, Bisterne. 145. Second prize, Mr. T. Mew, Cowes, Isle of Wight.

SILVER-SPANGLED HAMBURGH.—*Class 28.*—Chickens of 1853. 152. First prize, Mrs. Mills, Bisterne. 154. Second prize, Mr. H. Fisher, Blandford.

POLAND FOWL (BLACK, WITH WHITE CRESTS).—*Class 29.*—Exceeding one-year-old. 157. First prize, Mrs. Mills, Bisterne. 158. Second prize, Mr. Edwards, Lyndhurst Station.

POLAND FOWL (BLACK, WITH WHITE CRESTS).—*Class 30.*—Chickens of 1853. 160. First prize, Mrs. Mills, Bisterne. 162. Second prize, Mr. Edwards, Lyndhurst.

POLAND FOWL (GOLDEN).—*Class 32.*—Chickens of 1853. 169. First prize, Mr. Fisher, Blandford. 166. Second prize, Mr. C. Stephenson, Brixton. Age, eight months.

POLAND FOWL (SILVER).—Class 33.—Exceeding one-year-old. 171. First prize, Mr. Perkins Jones, Fulham.

POLAND FOWL (SILVER).—Class 34.—Chickens of 1853. 172. First prize, Mrs. Assheton Smith, Tidworth. 173. Second prize, Mr. Edwards, Lyndhurst.

CROSS BETWEEN ANY BREEDS.—Class 35.—Birds exceeding one-year-old. 175. First prize, Mr. Attwater, Cheltenham. (Dorking and Malay.) 174. Second prize, Mr. Fooks, Tarrant Monckton. (White Dorking and White Cochin.)

CROSS BETWEEN ANY BREEDS.—Class 36.—Chickens of 1853. 188. First prize, Mr. Attwater, Cheltenham. (Dorking and Malay.) Age, seven months. 183. Second prize, Mr. Fooks, Whitchurch, Dorset. (Cochin and Dorking.) Age, six months.

BANTAMS (GOLD-LACED).—Class 37.—199. First prize, Mr. J. Crane, Jun., Tolpuddle, Dorset. 198. Second prize, Mr. J. J. Fox, Devizes.

BANTAMS (SILVER-LACED).—Class 38.—201. First prize, Mr. Cateels Cooper, Guildford.

BANTAMS (WHITE).—Class 39.—204. First prize, Mr. J. P. Mew, Cowes, Isle of Wight. 206. Second prize, Mrs. Assheton Smith, Tidworth House.

BANTAMS (BLACK).—Class 40.—214. First prize, Mr. J. Fox, Devizes.

BANTAMS (ANY OTHER VARIETY).—Class 41.—220. Second prize, Mr. W. Symonds, Milborne St. Andrew. (Silk.)

GESE.—Class 42.—231. First prize, Mrs. Pinnegar, Coombe. 224. Second prize, Mr. Edwards, Lyndhurst. (Whole class commended.)

DUCKS (WHITE AYLESBURY).—Class 43.—236. First prize, Mr. Edwards, Lyndhurst. 235. Second prize, Mr. W. Fooks, Tarrant Monckton. Age, nine months. (Whole class commended.)

DUCKS (ROVEN).—Class 44.—242. First prize, Mr. H. Fookes, Whitchurch. 246. Second prize, Mr. John Wickham, Sutton Scotney.

DUCKS (ANY OTHER VARIETY).—Class 45.—248. First prize, Lady M. Macdonald, Liphook, Hants. (Buenos Ayres.)

TURKEYS.—Class 46.—Birds exceeding one-year old. 262. First prize, Mr. R. Waters, Boscombe. 264. Second prize, Mr. C. Smith, Durnford. (Whole class commended.)

TURKEYS.—Class 47.—Birds hatched in 1853. 268. First prize, Mrs. Attwater, South Newton. (Copper-colour.) 272. Second prize, Mr. Symonds, Gorwell. (Bronze.) (Whole class commended.)

DISTINCT VARIETIES.—Class 50.—280. First prize, Mrs. Assheton Smith. (White Polands.) 277. Second prize, Dr. Burney, Gosport. (Ptarmigans.)

DISTINCT VARIETY—CHICKENS.—Class 51.—287. First prize, Mr. Cave, Hartley Row. (Bramah Pootra.) Age, five months. 289. Second prize, Miss Bathurst. (Silk Fowls.)

HARDY BORDER PLANTS.

(Continued from page 268.)

ACONITUM PANICULATUM.

PANICLED WOLFSEANE OR MONKSHOOD.

THIS is a very desirable kind, having flowers large, and of a pale blue colour. It is said to be a native of France, and introduced to this country in the year 1815. Its roots are tuberous, supported by a large mass of fibres. It is readily increased by division in the spring months, when it first puts up its leaves. The roots may remain in the same spots for many years without injury, or becoming too wide and straggly. Its stems rise, according to the soil and situation, from three to five-and-a-half feet in height. They are much branched upwards, the branches being somewhat twisted, and panicles straggling. The upper part of the flower, or helmet, is conical, or half-circular, and the spur short, thick, and a little spiral. The leaves are deeply cut, or lobed; the segments saw-toothed, and curved upwards at the points.

There is a great similarity in the growth of this species and of the *variegatum*, both in the shape and cut of the leaves, the manner of branching stems, and the form of its expanded blossoms.

It is a very ornamental plant, but, of course, from its height, it should form a bunch in the back or centre row in the borders or beds. It flowers from the end of June to the end of August.

T. W.

OUR CONTEMPORARIES.

THE FAMILY FRIEND.—Most unreservedly and strongly do we recommend this little monthly periodical to our readers. Its very varied contents are full of amusement as well as instruction. The illustrations, also, are excellent. As somewhat relative to our own subjects, we quote from it the following, on Salads.

"Salad.—The herbs and vegetables for a salad cannot be too freshly gathered. They should be carefully cleared from

insects and washed with scrupulous nicety; they are better when not prepared until near the time of sending them to table, and should not be sauced until the instant before they are served. Tender lettuces, of which the outer leaves should be stripped away, mustard and cress, young radishes, and occasionally small green onions, (when the taste of the party is in favour of these last), are the usual ingredients of summer salads. Half-grown cucumbers sliced thin, and mixed with them, are a favourite addition with many persons. In England it is customary to cut the lettuces extremely fine; the French, who object to the *flavour of the knife*, which they fancy this mode imparts, break them small instead. Young celery alone, sliced and dressed with a rich salad-mixture, is excellent; it is still in some families served thus always with roast fowls. Beet-root, baked or boiled, blanched endive, small salad-herbs which are easily raised at any time of the year, celery, and hardy lettuces, with any ready-dressed vegetable, will supply salads through the winter. In *summer salads* the mixture must not be poured upon the lettuce or vegetables used in the salad, but be left at the bottom to be stirred up when wanted, as thus preserving the crispness of the lettuce. In *winter salads*, however, the reverse of this proceeding must be adopted, as thus: the salad of endive, celery, beet, and other roots being cut ready for dressing, then pour the mixture upon the ingredients, and stir them well up, so that every portion may receive its benefit. In doing this, it should likewise be recollected that the spoon and fork should always be of wood, and of sufficient size to stir up the vegetables in large quantities.

"Salad dressing.—For a salad of moderate size, pound very smoothly the yolks of two hard boiled eggs with a small tea-spoonful of unmade mustard, half as much sugar in fine powder, and a salt-spoonful of salt. Mix gradually with these a small cup of cream, or the same quantity of very pure oil, and two table-spoonfuls of vinegar. More salt and acid can be added at pleasure; but the latter usually predominates too much in English salads. A few drops of Cayenne vinegar will improve this receipt. Hard yolks of egg, two; unmade mustard, one small tea-spoonful; sugar, half as much; salt, one salt-spoonful; cream or oil, small cupful; vinegar, two table-spoonfuls. To some tastes a tea-spoonful or more of eschalot vinegar would be an acceptable addition to this sauce, which may be otherwise varied in numberless ways. Cucumber-vinegar may be substituted for other, and small quantities of soy, caviare, essence of anchovies, or catsup may in turn be used to flavour the compound. The salad bowl, too, may be rubbed with a cut clove of garlic, to give the whole composition a very slight flavour of it. The eggs should be boiled for fifteen minutes, and allowed to become quite cold always before they are pounded, or the mixture will not be smooth; if it should curdle, which it will sometimes do, if not carefully made, add to it the yolk of a very fresh unboiled egg. As we have before had occasion to remark, garlic, when very sparingly and judiciously used, imparts a remarkably fine savour to a sauce or gravy, and neither a strong nor a coarse one, as it does when used in larger quantities. The veriest morsel (or, as the French call it, a mere *soupcou*) of the root is sufficient to give this agreeable piquancy; but unless the proportion be extremely small, the effect will be quite different. The Italians dress their salads upon a round of delicately toasted bread, which is rubbed with garlic, saturated with oil, and sprinkled with cayenne, before it is laid into the bowl: they also eat the bread thus prepared, but with less of oil, and untoasted, often before their meals, as a digester.

"French Salad dressing.—Stir a salt-spoonful of salt and half as much pepper into a large spoonful of oil, and when the salt is dissolved, mix with them four additional spoonfuls of oil, and pour the whole over the salad; let it be well turned, and then add a couple of spoonfuls of vinegar; mix the whole thoroughly and serve it without delay. The salad should not be dressed in this way until the instant before it is wanted for table; the proportions of salt and pepper can be increased at pleasure, and common, or cucumber-vinegar may be substituted for the tarragon, which, however, is more frequently used in France than any other.

"Another Salad dressing.—Boil two eggs ten minutes, and put them into cold water, to harden and cool; then take out

the yolks, and rub them through a coarse sieve into a basin; add two table-spoonfuls of olive-oil, a tea-spoonful of salt, the same quantity of mustard, half the quantity of ground black pepper, a tea-spoonful of soy or essence of anchovies, and two table-spoonfuls of vinegar; incorporate the whole, and pour this sauce down the side of the salad-bowl. The whites of the eggs will serve to garnish the salad.

"Summer Salad."—Wash very clean one or two heads of fine lettuce, divide it, let it lie some time in cold water; drain and dry it in a napkin, and cut it small before serving. Mustard and cresses, sorrel and onions, may be added.

"Winter Salad."—Wash very clean one or two heads of endive, some heads of celery, some mustard and cresses; cut them all small, add a little shredded red cabbage, some slices of boiled beet-root, an onion, if the flavour is not disliked; mix them together with salad sauce. In spring, add radishes, and also garnish the dish with them.

"Vegetable Salads" made of roots which have been boiled, also make good winter salads, amongst which *potato* and *beet-root* salads are perhaps the best. Cut the roots into thin slices, season them with pepper and salt, and pour over them the salad mixture, to which may be added, if the flavour be not disapproved, a few slices of raw onion.

"French Salad."—Chop three anchovies, a shalot, and some parsley, small, put them into a bowl with two table-spoonfuls of vinegar, one of oil, a little mustard, and salt. When well mixed, add by degrees some cold roast or boiled meat in very thin slices; put in a few at a time, not exceeding two or three inches long. Shake them in the seasoning, and then put more; cover the bowl close, and let the salad be prepared three hours before it is to be eaten.

"Italian Salad" is made by picking the white portion of a cold fowl from the bones in small flakes, piling it in the centre of a dish, and pouring a salad mixture over, enriched with cream; make a wall around with salad of any kind, laying the whites of eggs, cut into rings, on the top in a chain.

"Spanish Salad."—Take whatever salad can be got, wash it in many waters, rinse it in a small net, or in napkins, till nearly dry, chop up onions and tarragon, take a bowl, put in equal quantities of vinegar and water, a teaspoonful of pepper and salt, and four times as much oil as vinegar and water: mix the same well together; take care never to put the lettuce into the sauce till the moment the salad is wanted, or it loses all its crispness and becomes sodden.

For Vinaigrette.—Take any kind of cold meat, chop it finely, and lay it in a dish; chop the whites of the eggs employed for the salad very finely with small onions; add any kind of herb, and pickled cucumbers, all chopped finely: make a garnish round the meat, serve it with salad mixture, but do not stir it together, as it would spoil the appearance of the dish, which looks very pretty with the eggs and herbs in a ring.

"Chicken Salad."—Boil a chicken that weighs not more than a pound and a half. When very tender, take it up, cut it in small strips; then take six or seven fine white heads of celery, scrape and wash it; cut the white part small, in pieces about three quarters of an inch long, mix it with the meat of the fowl, and just before the salad is sent in, pour a dressing made in the following way over it. Boil four eggs hard; rub their yolks to a smooth paste with two table-spoonfuls of olive oil; two tea-spoonfuls of made mustard; one tea-spoonful of salt; and one tea-cupful of strong vinegar. Place the delicate leaves of the celery round the edges of the dish. White-heart lettuce may be used instead of celery. Any other salad dressing may be used, if preferred."

TO CORRESPONDENTS.

WILLIAM ADAMS (C).—Both your very kind enclosures have been received, and applied as nearly as possible as you directed. The Authoress of "My Flowers" will explain more.

DISEASED GESNERIA (A. L. C.).—The leaves of your *Æschynanthus* and *Columnnea* are diseased; the inner substance of the leaf appears to be destroyed. You wish to know how to restore them to health. The diseased leaves cannot be restored, and, therefore, they may as well be cut off at once, and if the shoots are thereby left quite naked it will be advisable to shorten them in also freely. The plants should have fresh compost to grow in, and a brisk heat to start into fresh growth. Do this well, and disease will disappear. Did you ever observe a little insect, or grub, in the interior of your leaves? The disease is very likely caused by such a grub. Celery leaves are often destroyed in apparently

a similar manner to the leaves of your *Columnnea*, &c.; and the mischief is certainly done to the Celery by a little mining grub.

TRAILING VERBENAS (Vervæ).—There are very few of our modern Verbenas that have the trailing habit of *Verbena melindris*. The only ones are varieties of that species—namely, *V. melindris major* and *V. melindris alba*. There is an old sort named *Hendersonii* that creeps, and it has dark purplish-crimson flowers. *Ormsby Beauty*, also, has a dwarf habit, and is a pleasing light blue; but it is none of the *melindris* breed.

CHRYSANTHEMUMS (Homo).—You ask more than we can tell you. We should suppose there are no Chrysanthemums that are hardy enough to blow out-of-doors as far north as Lancashire. Have you ever seen any? The following is a list of the best now grown, arranged in the colours you mention:—*Rose*—Amazon (Salter), with orange border; Fortune, ditto; Agenor (Salter), Barrette. *White*—Diamant de Versailles, Errine, Fleur de Marie, Gem de Versailles, Lady Talford. *Purple*—Leon Laquay, Armand Tessier—there are very few of this colour. *Bright Scarlet*—The nearest approach to this colour is *Atrorubens*, raised by Boulanger, of Paris. *Mount Etna* is a red. There is not a bright scarlet in existence. *Yellow*—L'ingot d'Or, Annie Salter, Cloth of Gold, Nandee. *Orange*—Poudre d'Or, La Reine d'Or, Plutus, Gluck, Temple of Solomon. *Dark*—Rantonette, Comte de Ranton, Madame Poggi, Phidias. The price of the above would be, on an average, about 12s. the dozen. We cannot recommend dealers. Any respectable nurseryman would supply you. Your other questions will be answered shortly.

ROCK-WORK IN FERNERY (D. E.).—You are erecting a house for Ferns, and intend planting them out against the walls, in a kind of rock-work, and wish to know the material to be had. If you can get rough sandstone, that would answer well. It might be placed irregularly against your walls, with spaces left to hold soil for the Fern-roots. There is a Fern-house at J. Anderson's, Esq., the Holme, Regent's Park, London, where the Ferns are planted against the walls in a kind of rustic basket, or nest, made with Roman cement. If stones are scarce with you, you might make a similar arrangement, having the largest spaces towards the bottom, and the smaller upwards, to grow in each Ferns of proportionate size. Read Mr. Appleby's papers on Ferns; he describes the height each grows to. In the meantime, we give the list below, agreeable to your request. None of them are expensive, but all require moderate heat:—*Adiantum* assimile, medium size; *A. concinnum*, medium; *A. formosum*, large; *A. trapeziforme*, large; *Acrostichum alacorne*, large; *Aspidium coriaceum*, large; *Asplenium auritum*, small; *A. eburneum*, small; *Blechnum intermedium*, small; *B. occidentale*, medium; *Cheilanthes hastata*, medium; *Cheilanthes lundigeræ*, medium; *C. repens*, large; *C. tenera*, small; *Cænopteris cicutaria*, medium; *C. viviparum*, medium; *Cyrtomium falcatum*, large; *Davallia canariensis*, medium; *D. pyxidata*, large; *Doodia aspera*, small; *Gymnogramma calomelanos*, large; *G. chrysophylla*, medium; *Pteris chinensis*, medium; *P. sagittifolium*, small. In addition to these, you should have all the *Lycopodiums*.

HEN DEAD ON THE NEST (T. S.).—In this case, in which the hen was fed on Indian meal and bran twice a-day, with corn and dry rice, the death, doubtless, arose from apoplexy, which is not unfrequent in fat laying hens. Indian meal and bran both contain a high proportion of fat-forming food, and being largely supplied, no doubt conducted to the attack. A little raw, dry rice could not have had any ill effect, although, if much were given, it might swell to so great a degree as to cause the bird to become crop-bound. Under any circumstances, rice is better given after having been cooked.—W. B. T.

COCK WITH MALFORMED TAIL (A Dorking Fanier).—The occurrence of soft quills filled with blood in the tail of a cock, in the place of well-formed feathers, depends evidently on some irregular action of the parts which form or secrete the feather; and as these are situated deep in the skin it is difficult to suggest a remedy. It would, perhaps, be most advisable to trust to the restoration of the natural action at the next moulting time.—W. B. T.

DISEASED RABBIT.—Can any of our readers give *Ascut* information on the following case?—"On examining a rabbit of the Lop-eared breed to-day, I found one ear completely filled with a hard matter resembling scurf; on touching the ear the rabbit screamed out. I then took as much of the hard stuff off as I could, and bathed with warm water; after that I greased the ear well. I took two pieces as large as a man's finger from the ear, which seemed to reach quite to the farthest extremity. Can you tell me the cause of this, and a remedy for same?"

COCOA-NUT (Linda).—The end of the nut, which has the three circular marks or scars, "commonly known as the monkey's face," is the base, or that next the stalk. It is not generally known that these three marks indicate the places through which the three embryos each nut contains would sprout forth if each was completely developed. Two, however, are constantly abortive; and which is the fertile may be ascertained by trying to thrust a pin into each scar. Those two which the pin cannot pierce are those over the undeveloped embryos.

EXCHANGE (W. Nicholas).—We cannot insert such a proposal. When we have seen a specimen of your communications we can decide whether they are suitable.

VINEGAR PLANTS (Bayswater).—We cannot undertake such negotiations. You had better advertise.


TAUNTON SHOW (J. E. M.).—We are much obliged; but as the committee did not think it of sufficient interest to our readers to advertise it in our columns, we cannot allow ourselves to shew we differ from them by inserting their prize list.

INSECT ON CINERARIAS (An Enquirer).—It is the thrips which has attacked them. Dust over the insects frequently with Scotch snuff, and syringe the leaves when the weather permits.

HALL'S GARDEN NETS.—Mr. J. Meacham, Lichfield, wishes to know where these can be obtained.

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WEEKLY CALENDAR.

M D	D W	JANUARY 19—25, 1854.	WEATHER NEAR LONDON IN 1853.							Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo. Wind.	Rain in Inches.										
19	Th	Cryptops hortensis; gardens.	29.957—29.799	54—47	S.W.	05	58 a 7	24 a 4	10 11	20	11 2	19			
20	F	Cryptops Savignii; gardens.	29.714—29.589	55—37	S.W.	17	57	26	11 27	21	11 20	20			
21	S	Sun's declinat., 19° 55' s.	29.463—29.360	50—33	S.W.	06	56	27	morn.	22	11 37	21			
22	SUN	3 SUNDAY AFTER EPIPHANY.	29.764—29.523	42—35	N.W.	00	55	29	0 46		11 54	22			
23	M	Geophilus Acuminatus.	30.122—29.970	43—31	N.	00	54	31	2 8	24	12 9	23			
24	Tu	Geophilus longicornis.	30.157—29.904	42—34	N.	00	52	33	3 34	25	12 24	24			
25	W	CONV. OF ST. PAUL.	29.803—29.647	42—32	E.	00	51	34	4 59	26	12 33	25			

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 43.1° and 33.1° respectively. The greatest heat, 60°, occurred on the 19th in 1828; and the lowest cold, 45°, on the 19th in 1838. During the period 93 days were fine, and on 96 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 233.)

ARABIS HIRSUTA: Hairy Wall Cress; Daisy Tower Mustard.



Description.—It is a perennial. Root strong and woody.

Stems several, about a foot high, upright, leafy, clothed with thick-set, spreading, or partly bent-down hairs; branched, and less hairy, at the top. Leaves bluntish, variously toothed, more or less rough, with short, bristly, simple or forked, prominent hairs; the root-leaves largest, reversed-egg-shaped, tapering at the base; stem-leaves numerous, stalkless, oblong-egg-shaped. Flowers small. Calyx smooth, purplish. Petals white, moderately spreading. Stigma stalkless. Pods forming very long, close, smooth clusters, erect, slender, smooth; valves with a slight keel half way up, undulated from the alternate projection of the seeds, which are in a single row; not a double one like *Turritis*. This last character, confirmed by a similitude of habit, is admirably chosen by Mr. Brown to define the genus *Arabis*, in contradistinction to *Turritis*, whose much more numerous seeds are disposed in double rows.

Time of flowering.—May.

Places where found.—On old walls, stony or rocky banks, and mountain dry pastures. Not common.

History.—Parkinson calls this the *Erysimum* or "Hairy Hedge Mustard, with uncut leaves," and Ray describes it as *Barbarea muralis*, "Wall Cress, or Tower Mustard, with Daisy leaves." It is the *Turritis hirsuta* of Linnæus, and many other botanists. If grown in a rich soil it not only acquires a much larger size but loses all its hairiness. It is one of the "Scitica Cresses" of the old herbalists, who say that if the roots, or leaves, but especially the roots, are bruised in summer, and made into an ointment with hog's-lard, applied to the part affected with rheumatism, for four hours, and the place afterwards bathed with a little oil, and covered with wool or other warm wrapper, a cure will always be effected. (Smith. Withering. Ray. Parkinson.)

THE January Meeting of the *Entomological Society* was held on Monday, the 2nd inst., at the Society's Rooms, and, notwithstanding the great severity of the weather, was much better attended than could have been anticipated. The Members of the Council had, however, been especially summoned to a meeting previously to the general meeting, to settle the lists of Council and Officers for the ensuing year, to be proposed at the Anniversary Meeting on the fourth Monday in the month; the result of which was, that Messrs. Spence, Curtis, Westwood, and Janson, are proposed to be removed from the Council, and Messrs. Stainton, Dallas, F. Smith, and Edward Shepherd, to be elected in their stead. We are not sorry to perceive, in this arrangement, that the Council are anxious to bring the younger active members of the Society into the Council, re-

moving such as from their length of service may desire to be released from the duties; but we think that the rule which is adopted of striking off such Members as have attended the Council Meeting the fewest number of times has been too rigidly adopted in the case of one of the gentlemen proposed to be removed, as his absence was known to have arisen from his having been abroad for a long period, and his long service and devotion to the science, with his return to this country, ought, in our opinion, to have ensured his retention on the Council, and which, in fact, we hope may still be effected at the Anniversary Meeting. The Council do not propose any alteration in the list of officers for the ensuing year.

Amongst the donations to the Library and Museum, received since the last meeting, were the "Transactions of

the Natural History Society at Vienna;" the "Journal of the Entomological Society of Stettin;" an elaborate Memoir on the anatomy, history, and transformations of the common domestic Black-beetle, or Cock-roach (*Blatta orientalis*) in which the author has endeavoured to investigate the place of its origin, whence it has been so widely distributed over the habitable world; the remarkable nature of its egg-case, &c., is also carefully examined and described.

A number of splendid *Lepidoptera* were presented by Mr. Jones Stevens, of Bogota; and various species of rare British *Microlepidoptera*, by Mr. Vaughan, of Bristol. A note was communicated on the decease of Mr. Whitfield, the African traveller and collector, by whom so many rare animals had been brought to this country. Mr. Samuel Stevens exhibited some specimens of the splendid *Morpho Ganymede* (*Morpho Sulkowskyi*, of Kollar, recently described and figured in the Vienna Transactions), which he had received from Mr. Jones Stevens, of Bogota. One of the specimens had arrived in a bad condition, being saturated with an exudation of grease. Having, however, dipped the Butterfly in camphine, and then powdered it over with magnesia, or pipeclay, the grease is entirely absorbed, and the fly has entirely regained its former brilliancy. Mr. S. Stevens also exhibited some beautiful *Lepidoptera* from Manilla. The Secretary read a note by Mr. Jones Stevens, on the occurrence of many species of minute moths in Bogota, but as they generally came to the lamps at night, they could not be captured and preserved in good condition.

The Secretary also read a note by Mr. R. Fortune, from the *Gardeners' Chronicle*, on the mode of taking honey from bee-hives in China. The Chinese hives consist of a rough box, square or cylindrical, with a moveable top and bottom, which is rarely placed near the ground, as with us, but is raised eight or ten feet high, and generally fixed under the projecting roof of a house or out-building. When it is desired to take a portion of the honey, the hive is gently lifted down, and placed on its side on a table; the moveable top is then taken off, and as much honeycomb as is considered desirable cut out with a knife, made apparently for the purpose, having the handle almost at right angles with the blade; the top is then replaced, and the hive elevated to its former position. The bees had neither been killed by fumes of brimstone, as it is contrary to the Buddhist Creed to take away animal life, nor had they been stupefied with fungus, but they were flying overhead, during the operation, in great numbers, without even stinging the half-naked operator; but they were rendered harmless by the smoke of the dry stems of leaves of a species of *Artemisia*, which grows wild on the Tea-hills, which is cut early in summer, sun-dried, and twisted into bands, and used for this purpose, as well as for driving the Mosquitoes out of the dwellings.

Mr. Westwood stated that a similar plan of taking honey had been adopted by an apiarian neighbour of his at Chiswick, and who, having turned-up the hive to be operated upon, partially stupefied the bees by a few

whiffs of tobacco-smoke; he had himself succeeded in extracting as much comb as was desirable from his hives even without the use of tobacco, by simply turning the hive upside down, and driving the bees into an empty hive, and then cutting out the comb, working slowly and quietly, and brushing off the few bees which remained in the comb with a feather.

Mr. Curtis read a note upon the habits of *Panurgus ursinus*, a curious wild Bee, which he had observed formed its burrows on hard earth at Tunbridge Wells. He had noticed the females occasionally curled up, as if asleep, in the flowers of *Hieracium*; and at other times with their hind-legs laden with pollen. The first portion of a Memoir on the *Chrysomelida* of New Holland, by Mr. Baly, was read, containing the genera *Phyllocharis* and *Lamprolina*; also, descriptions by Mr. Hewitson, of new species of Butterflies from Bogota; and an elaborate Memoir by Dr. Davy, F.R.S., on the Chemical Analysis of the excrement of insects, from which some remarkable results were deduced, with reference to the analogies exhibited with the urinary and excrementitious secretions of birds, serpents, &c.

AFTER two years' experience, we think it right to express our firm conviction that the most valuable domestic Fowl at present known to us is the Shanghai, or Cochin-China.

If any one conversant with poultry as a stock for profit were asked to give what he considered the points of excellence desirable in such fowls, he would reply—"They should be large, quick of growth, hardy, fit for the table at an early age, meaty, abundant layers, especially in winter, good mothers, quiet in their habits, and their feathers valuable for the upholsterer."

Now, in every one of these points do the Shanghai excel. Their feathers are equal to those of the Goose. No fowl known to us is so gentle, or can be kept within a boundary no higher than three feet. Better sitters, or mothers more careful of their chickens, cannot be found; and at the end of a month from their hatching time they will again begin laying with their chickens around them. That they are early fit for the table is told by the facts that cockerels are best cooked when from four to five months old, and pullets when from five to six months old, and that, if tolerably well fed, they will weigh about 1½ pounds for every month of age. As to their hardihood, we have not heard of their suffering anywhere during the late severe weather, though we know of many that endured it with no other shelter during the day than a roofed shed, boarded up on the north and east sides. As layers they are surpassed by none. We have known instances of pullets laying more than 190 eggs without requiring to sit. Pullets when six months old begin laying, and continue doing so throughout the winter.

As to their meatiness, the very great mistake is being assented to by some breeders of this fowl, that there is more of giblets than meat upon them. It is quite true that most of the meat on a cockerel is upon the legs,

but it is not so in the case of pullets, for these have breasts quite as well developed as the usual breed of barn-door fowls. Those who condemn the Shanghae as a bird deficient in producing serviceable flesh, ground that condemnation on the crooked-breasted, crooked-backed, or otherwise imperfect birds that are rejected from the stock. Good, short-legged, compact pullets are too valuable as yet to be killed usually for the table, but we can attest that such birds are as meaty on the breast even as Dorkings, and the flesh is more juicy, but not so close grained.

The sole point of inferiority, then, which can be established against the Shanghae fowl is that its cockerels are deficient in breast meat. Then, to make the breed perfect, let breeders set about selecting birds for stock that are characterised by well-developed breasts. We know of one cock that is breasted like a Dorking, and he will be coupled this season with an imported hen that has the largest development of breast we ever knew in any bird. The attention of the breeders of Shanghaes has been most successfully directed towards the improvement of colour—let it now be turned to the more important improvement of an increase of flesh upon the breast. We know, from experience, that it is to be effected; and the results of further experiments, we are confident, will be still more effectual. The two brothers, Messrs. R. and C. Colling, achieved far greater changes in the arrangement of meat upon their Short-horns than has to be accomplished upon the Shanghae.

Even whilst we are writing this we have received letters confirmatory of our views. Thus, a first authority, writing to us about the recent challenge exhibition, expressly says that *form*, and not mere size, gave the palm to Captain Snell. His letter is as follows:—

“The town of Honiton, Devonshire, was, on the 28th ult., the scene of far greater excitement than has hitherto agitated the poultry world, and the influx of amateurs from long distances was far beyond all precedent. Though situate twelve miles from the nearest railway station, Liverpool, Manchester, Shrewsbury, Birmingham, and intermediate places, sent incredible numbers of the poultry fancy, while not a trifling addition of amateurs reached Honiton from the metropolis.

“This was occasioned from the news being carried, with wild-fire rapidity, that the challenge of Captain Snell, of St. Swithin's Lane, London, to all Cochins-China breeders in Devon and Cornwall, to produce the equals of those that gained first prizes in London, Southampton, and various other places, had been accepted by Mr. W. L. Channing, of Heavitree, Exeter, and that the event was to take place at the Honiton Exhibition of Poultry.

“Each pen of birds had its confident supporters, who somewhat liberally espoused their individual opinions by making it the subject of a ‘betting speculation;’ and, no doubt, considerable sums changed hands in consequence. Another notoriety of this affair arose, too, from the lengthy correspondence that had previously taken place, in the public newspapers of Devonshire, between their respective owners. To prevent the possibility of any unfairness, the committee had (with the sanction of the owners) placed the rival favourites intermixed among thirty other pens in the same class, and secured the services, as judge, of Mr. Edward Hewitt, of Eden Cottage, Birmingham, to officiate on this unusually important occasion—so that not the slightest possible clue might offer itself, either as to the ownership of the ‘favourites,’ or their individuality. These arrangements complete, the anxiety to ascertain the result

was unceasing; and every stratagem was called into play to get early information of the successful ones; and not till the public admission was it known that; another chaplet was added to the existing laurels of Captain Snell, though the most diverse statements on the affair had been ‘flying about’ for hours previously to the judge entering on his duties. It is very doubtful whether two so perfect pens ever before contested publicly for the mastery, and certain it is that time will long pursue its onward course before such rivals again enter the lists. One marked difference was at once apparent—that the defeated fowls, in regard to size, had the superiority; not so, however, in respect of formation and colour—Captain Snell's being a perfect self-coloured light buff; his rival's, on the other hand, being what is termed ‘mealy,’ or ‘grizzled,’ more especially on the wing coverts; neither could they boast of the perfection of shape that marked the winning pullets—one, more especially. The visitors, generally, made the space opposite ‘the favourites’ the trysting place during their stay; while not a few, negligent of the excessive fall of snow, found it impossible to reach the trains in due time, and were, therefore, compelled to pay ‘a visit to mine host,’ to discuss over their wine the events of the closing day.”

Then, as to the table merits of the Shanghae, J. B., whose address we have, writes thus:—

“In publishing my ‘Poultry-yard Report,’ in your number of the 29th December, a mistake has been made. Instead of ‘Mr. Baily, of Mount Street, says flesh-coloured legs are inadmissible,’ it should be, ‘flesh-coloured legs are admissible’—just the opposite. I have lately had several Cochins chickens of four to six months old at table; the pullets were round and compact birds, but the cockerels rather leggy. The colour of some of them rather yellow before cooked, but of others not to be complained of. They were, however, my *worst-coloured fowls* that I killed. I am persuaded that the colour of my best light-feathered Cochins (none of which I have killed) would be unexceptionable in colour when killed, particularly those with pink-white legs. As to the eating of those already had to table, they were very superior to the common run of fowls—particularly tender, juicy, and well-flavoured. This opinion has been expressed by several, who should be judges, who have partaken of them at my table. I am persuaded that this breed will stand their ground as a very useful, if not the most useful, fowl. A first cross with the Dorking I can well conceive to be a first-rate table fowl.”

On the 9th, 10th, and 11th, took place sales by auction of drafts from three of the best Poultry Yards of England—Mr. Sturgeon's, Mrs. Herbert's, and Mr. Punchard's. We know that it has been an opinion prevailing recently that the taste for Shanghaes is declining. This opinion we felt convinced was grounded upon the fact, that at various recent sales (Mr. Stevens has had thirty-six in about as many weeks) the prices have been low. On the other hand, we saw in this no other proof than that the public judgment had improved, for the low prices were those given for indifferent birds. The results of these three sales testify that we were correct, for all the good birds realized good prices.

At Mr. Sturgeon's sale, the 100 lots sold for £275 17s. 6d. At his sale, in November, 1852, the highest sum given for one bird was £12 10s. for a cockerel, but this year, £13 10s. was given for Lot 39, “Rich buff cockerel, well-feathered, and of good weight;” another cockerel, Lot 16, sold for £10 15s., and two of the hens, Lot 42, “sister to the ‘Queen,’” sold for £7 7s.; and Lot 42, for £9 15s. A hen of 1851, winner of the

Cheltenham Cup, realised £10 10s. Of the *White Shanghaes*, the highest sum given for a cockerel was £4 5s., and the highest for a pullet, £1 15s.

Mrs. Herbert's fowls were sold on the 10th. Her *Buff* birds were very bad indeed, and her *Blacks* very little better; not one of the cockerels being without red feathers. Her *White Shanghaes*, for which she has been so justly celebrated, are not so stout as those of last year's sale. Seventy birds of these Whites were sold for £110. The highest price was £10 10s., and that was for the cockerel which took the first prize at Birmingham in 1853. The three pullets which accompanied him on that occasion sold for five guineas each.

Mr. Punchard's Shanghae fowls, all buff and cinnamon, were sold on the 11th. They were not so good as those drafted from his yard last year, being smaller and deficient in substance. The cockerels were better than the pullets. There were 160 Lots, and they sold for £176. The highest price given for a cockerel was £7 10s. for Lot 49, he having taken the second prize at Norwich, and been highly commended at Birmingham. The largest sum given for a pullet was £4 6s. for Lot 63.

THE WINTER: ITS PROBABLE EFFECTS ON VEGETABLES, &c.

IF the weather has been as severe in other parts of Britain as it has been in Cheshire, I make no doubt that a great outcry will prevail about the losses in our kitchen-gardens. I am not aware (speaking of the present moment, January 2,) that I ever saw stronger signs of extremely severe weather for a few days, for the thermometer now, whilst I write, six o'clock, P.M., is down to 6°, which is what we gardeners consider rather a strong case. But the accompaniments are remarkable; the wind has been vacillating in a singular way, although, to observe the extremely quiescent state of the air, one might materially imagine that not a disturbing cause existed. It rather reminds one of the accounts we have read of the conditions of atmosphere in the Polar regions, for although such an extreme depression of temperature exists, the air is bearable: I have known many a day in the beginning of March less so, when we have had a frost only some 10° or 12°, but accompanied by a cutting north-easter. Verily these winds are the greatest refrigerators, taking away not only warmth, but robbing all vegetable bodies of that moisture which not only promotes their succulence, but constitutes, as it were, their life-blood and energy.

I well remember the great frost of 1813—14(?), when the Thames was frozen, and a fair held on it. That very year I had left my school, which was on the banks of the Thames, opposite to the old Church at Putney; and having a few holidays before I was compelled to put my shoulder to the wheel, I was daily on the Thames with my school-fellows, and many dangers we narrowly escaped in crossing to Fulham on the ice-bergs which floated abundantly on the Richmond side of the bridge, whilst, strange to say, on the London side all was smooth ice, and, indeed, there the fair was held, with all its paraphernalia of printing-presses, booths, roundabouts, swings, &c.

But to my tale; I do not think that the present position of affairs greatly resembles it. A south-east wind greatly prevailing, a creamy condition of air, with huge rolls of mist in the evening, like the lace in folds round a lady's cap, rolling stealthily over the meadows,

at four o'clock, P.M., at about six feet above the ground level.

I should not depart so wide of the Cabbage and Lettuce question, but to furnish notes for comparison with those of distant friends, for, doubtless, many a one will be dreading the upshot, as we do in this quarter. To give a slight detail of recent temperatures, I must observe, that the frost here may be said to have set in at precisely the same period as on that former memorable occasion, viz., the day after Christmas-day, which, if my memory does not prove treacherous, was the exact period.

On Monday evening, the 26th, a slight frost occurred; in the night, on Tuesday, a good deal of snow fell; on Wednesday frost continued; and on Thursday morning, at seven, A.M., thermometer down to 6° or 7°; and on that same evening, rain, with a temperature ranging from 30° to 40°. On Friday, froze again; continued on Saturday. On Sunday afternoon, and through part of the night, a right old English snow, on Monday morning averaging six inches in depth, when we had to put our ice plough into requisition, for besoms were helpless, you might as well have had a lady's fan; and now, as before observed, the thermometer about 6°, with such a hoary starving look as would almost startle a veteran of the Siberian deserts.

Further I cannot report now; therefore let us see about its application.

One of the first families of vegetables which suffers is the Brocoli, and these are rather difficult to replace. Little can be done for these after suffering from the effects of severe weather; those that are half-killed must, of course, fall off in an immature state, and such being generally half-decayed in the stem, produce very lean and small heads. With regard to these things, every pains should be taken to get the hand-glass Cauliflowers forward, as if the destruction amongst spring Brocoli is very great there will be an unusual desire for these betimes. Plants, well-established in pots in the autumn, very sturdy, and preserved hitherto in frames, or pots, may be repotted, and placed in the front of some house in the course of January; these, with the use of liquid-manure, will be strong indeed by the end of February, when they may be got out under hand-glasses in rich soil, and every attention being paid them, nice Cauliflowers may be cut in the beginning of May. Lettuces will, doubtless, be heavy sufferers, especially those which were very strong plants in October, and to provide against such a mischance, sowings should be made immediately in boxes, or pans, and these introduced immediately to heat.

As soon as the young plants can be handled, a frame possessing a bottom heat of about 60°, should be appropriated to them, and they should be pricked out in rich soil, very close to the glass, and receive covering in severe weather. Such may be pricked out by the end of the month, and will be stiff little plants by the third week in February, when they must be hardened off, and planted out in prepared soil, in very warm situations, on elevated beds, and by receiving every attention, with an occasional liquid-manuring during dry weather in March and April, good Lettuces may be produced by the end of the latter month and all through May. Cabbage plants, too, are apt to suffer much in such winters, and even those of the dwarf, hearting kinds may be sown in heat, and transplanted after the manner of the other things. Those planted out in autumn should have examination during the first dry weather at the end of January or first week in February; they are apt to become loose in the soil. Such should be fastened, and have the soil drawn close to their necks; all blanks, too, should be made good, and towards the middle of March they will begin to benefit by a liberal application of liquid-manure during dry periods.

A close examination of all store roots should take place as soon as possible, and these should be all turned over and picked. Beets will have sprouted, and Parsnips, Carrots, &c., should have all sprouts and roots rubbed away. It is a capital plan to spread them in the sun and wind for several hours to kill the young fibres, and then to store them again. *Kidney*, or other early Potatoes, in early frames, may be placed in simple layers in boxes, first putting a layer of leaf-soil in the bottom, and sticking their ends in it; they may then be introduced to heat to sprout, but it will be well to cover them over their crowns with very fine manurial matter, which will cause them to produce strong sprouts. Such may be planted with fine sprouts three inches in length, in prepared beds, in the middle of February, and will, with proper attention, probably be found earlier than those planted at once in hotbeds in the end of December.

I may first mention, in addition to what I had previously stated with regard to the weather, that the thermometer, whilst I finish these observations, January 3, six o'clock, P.M., may be quoted about 3°; but as I do not place extreme reliance on my glass, it is not improbable that we may hear of its being below zero in some places.

It is not improbable that this weather may be followed by cutting winds, if so, it is fearful to contemplate the havoc amongst vegetables, tender trees, &c. This weather will also put some of our so-called hardy new shrubs and trees to the test, and will tend to purge some of our trade catalogues of over-glowing descriptions.

R. ERRINGTON.

PRACTICAL PRUNING.

WHEN a child is born high up in the world, I mean, up among the hills, the boy or girl is so far apart from other boys or girls, that a great deal is to be learned from the natural bent of the mind and body; add to this, that when the grown-up people gather together, as to a wedding, or a dance, or at sheep-shearing, or at "marking the lambs," or on any other common occasion, the boys and girls are put out of the way lest they should be troublesome; besides, these high born little ones are never allowed little high chairs to sit at table, they must take their porridge elsewhere, as it happens; so, as I have just hinted, they have no chance to learn much from doing what they see others do, for they do not see them at their doings. I believe, that if a dull child, say a boy, were left on an island where there was no one but himself, but where there were plenty of birds and animals, that he would learn two things, at least, that are prized in civilized life; he would learn to like flowers, and he would learn to dance from what he saw around him. No great credit thus for highlanders being such good natural dancers, yet they find it very difficult afterwards to learn it by rule and note; but when they get over the first three steps, the "one, two, three, and a hop," all the difficulty is over.

It is just the same in pruning. The man who has been accustomed to cut and prune after his own natural fashion, or as if he came to this world for no other purpose, will find it a hard and tedious process to follow and imitate the first three steps of the scientific pruner, even though the said pruner is guided as much by circumstances as by scientific rules; but no sooner does he master the first three fundamental rules for pruning than the difficulty is over. We must not suppose, however, that the thing is either easy to learn, or that every one can be a thorough master of it; like every thing else, there will always be better pruners than others, teach or practice as we may. To be a good general

pruner requires a long course of practice, because it is from that alone that we can learn the vast variety there is in the nature of so many kind of plants and trees. A forester may prune his Oaks to perfection itself, and yet cut a sorry figure against a Peach wall; and a smock-frock customer, in Kent, may prune a filbert bush better than my lord's gardener. So on to the end of the chapter.

Here we have certain kinds of trees to fill up the boundary line of a confined garden for a screen, such as Poplars, Maples, Thorns, Oaks, Horse Chesnuts, Spruce and Silver Firs, Scotch Pine, Larch, and such trees, and we must not allow them to spread out their limbs over our neighbour's garden, or suffer them to trespass on our own more choice trees and shrubs in front of them along the border. We have thus a definite object to prune for, as much so as he who prunes for a crop of fruit; and if we take heed as to how we start, our trees are just as easily managed, and more so than the Peach or Apricot against the wall. All depends on the style of pruning for the first few years. I once cut-in a shoot of a *Pinus excelsa* in the month of May, and it bled as fast as the drops could run, and the sap was as thin and clear as spirits of turpentine. I never saw any tree bleed so fast before or since. I repeated the experiment two seasons after that, and at the same time, when the sap flowed as before. I never knew a Spruce or a Silver Fir to drop the sap after a cut at any season, but if they are pruned late in the spring, they, and the Larch, as well as many other conifers, will ooze out a kind of resin in the form of gum; therefore I should not like to make free with any of the tribe, by way of pruning, from the end of March till after Midsummer, and I would not hesitate to cut them at any other season, so that the whole of the boundary trees under consideration may be pruned any time in the winter; but from the middle of June to the middle of July is the best time in the whole year to prune all forest trees whatsoever; the reason for that is, first, that none of them bleed at that season, the growth being then so rapid as to suck up all their sap faster than it comes, leaving none of it to run over; and secondly, that at that season growth is so vigorous, extending the seat of life outwards, that new wood is soon formed over small wounds, and round the sides of larger wounds; whereas, all wounds, or cuts, made from the end of October to the end of May, must necessarily stand fully exposed to all weathers till the Midsummer following. The worst of it is that few people can spare time for summer pruning.

The Spruce, Silver Fir, and Larch, and most conifers, seldom require any pruning in a boundary line, or anywhere in a garden, until they are old and full grown, and then all they require is to thin out the spray on the chief limbs, if the parts get too crowded, or, as is too often the case, if they were planted too close at first, and are now hurting each other, or some valuable shrubs near them, when the tops of the branches, which overrun the space between them and the shrubs, may be shortened back without any harm. So, too, if the Fir branches hang over the next door neighbour's garden, for, be it remembered, I am now contemplating one of the evils of a house semi-detached; builders will put up houses in pairs, and divide them and the garden across the middle, and if you plant trees along the boundary of No. 1, they will spread their branches over No. 2, and so will those of No. 2 in the other directions; thus the occupiers turn colours, the one looks black and the other looks blue, and soon they are as much divided as the houses and gardens they severally occupy; therefore, if only for the looks of the thing, it is surely worth while to learn to prune boundary trees before all other trees.

According to my tale, almost all trees can be so pruned as to grow something in the way of trees trained against

walls, that is, two-sided back boughs are stopped, from time to time, to prevent them spreading over to the other side, and front boughs the same, to keep them from trespassing on our own more choice things in front of them, and this stopping on two sides will force much of the growth right and left, and that will fill up the boundary-line much sooner and better than letting the trees grow in a more natural way. The only difficulty lies in this, the chance of having our trees look so much like a hedge, and that difficulty no pen can remove, but nothing in the world is more easy for the knife. A good pruner can give any form or turn to a tree, and still it will look as if it took that particular form naturally, and that is the right test for a good pruner; if you can trace his handywork after the trees are all in leaf, depend upon it he wants a cut or two himself. A Spruce tree is a good pattern to go by in pruning boundary trees, only the tiers of branches should not be so regular, nor the regularity of their diminishing lengths upwards so apparent, still, I say this is a very good pattern-tree. When you first begin to thin the head of a young tree is the right time to think of the Spruce pattern, and to follow it out patiently from year to year.

There would be little difficulty in so pruning and training a young Oak as to make it look exactly of the same style of growth as a Spruce—tiers of branches at regular distances, and the branches getting less and less in length upwards, but there is no need for such close imitation; all that I want to impress on the young pruner is, that there is nothing in the nature of our deciduous trees to prevent him from giving them the same form as the Spruce has by nature; and, then, knowing he has this power, I want to teach him also not to make bad use of it, or to blame THE COTTAGE GARDENER if he does. A genial soil, and good brains, help to cover every brick in a fruit-wall; but the best brains, contending against bad soil, find it a difficult matter to make a decent appearance. None of this difficulty, however, affects our pruner on the present occasion; if branches come at all, he knows they must have space enough allowed them to expose their leaves to sun and light, and if more branches come and crowd the necessary space, he knows he must prune off the supernumeraries. He knows, also, that main branches will grow in size, and extend in length, just as trees do, and he prunes them from the beginning as he would thin a thick plantation. In course of years, he finds the side-branches on the main limbs require exactly the same kind of management as the large limbs when they were mere branches did at the first setting-off, that is, they, too, get crowded, and must be thinned, else their closeness, and consequent shade, will soon spoil other branches which he cannot well spare, and so he removes them as often as they interfere with his plans, so that, in fact, the proper thinning of the head of forest-trees, and all other trees, according to their natures, is the main and grand secret of the pruner's art, and the last thing that is thought of, when we want to make a pruner of a country bumpkin, or of my lord Duke, with his thousands of acres, who, if he thinks at all on the subject, is perfectly satisfied with his forester, if he, the said forester, knows as much as keeping down aspiring leaders, and cutting off a tier or two, year by year, from the under or lowermost boughs, but that degree of knowledge could be taught to a noodle in ten minutes; and it is idle talk, if not altogether shameful, to rail at Royal Forest Commissioners for doing the very thing that our best books on foresting, until a very recent date, were teaching, and even insisting ought to be done. The whole thing amounts to that style of writing called "teaching your grandmother." You now perceive a better order of things, and you find fault with her, poor soul, because she did not find it out for herself before your first smile gladdened her very heart.

Yes, and I say it, and I will maintain it, until the end of the war, that the grand secret of pruning lies in the thinning of the branches, first, from the main trunk of the tree, and afterwards from the great limbs into which the first branches grow in the course of years. In short, I hold it as a fundamental rule, that every main branch, or great limb, which is only the same thing, in the head of a tree, requires the same kind of pruning and attention, after a certain age, as the trunk and head required at the first setting-off; and that rival branches, and crowded ones, ought, and must be removed, or subdued, in the one as well as in the other. A healthy tree will always make more shoots, and, consequently, more leaves than can receive the necessary light for the exercise of their functions; or, if they do for a year or two, they get overshadowed after that, and the pruner must remove them in time, rather than allow nature to suppress and kill them in the long run; but all that is necessary to know about thinning, neither science, or a practical pen can thoroughly teach a third party; you might as well try to learn a man to make a military cloak, or Wellington boots, except as far as general rules can teach.

The *Cedar of Lebanon* is often the worst-managed tree in England, while it is young and growing very fast, and the best tree I know of to point to for the teaching of thinning heads and limbs of trees. At the first going-off this tree grows so slowly that the intervals between the tiers of branches is very little, and the branches themselves do not come in regular tiers, as in the Spruce, until the tree has grown freely in its final place, and often not even then, or at any stage of its growth, owing to slight variation in the seedlings, like those of the Scotch Fir. There is one peculiarity, however, in all the varieties of this Cedar, which is much in the favour of the pruner; it bears the knife more freely than any other tree, not excepting the Yew; and, like the Yew, no day in the year comes amiss to it for pruning. I have had a great deal to do with young Cedars of Lebanon in my day, and I am quite sure of all this, and I know that one can give any kind of form to the tree by pruning, from the shape of a Currant bush to that of the Larch, or Lombardy Poplar; but for illustrating the subject of thinning, I shall suppose the Cedar of Lebanon is to be carried up as the Silver Fir grows—a regular set of tiers at regular distances all the way up, and no small branches left between these tiers, only little stumps of small branches that were stopped early, and the usual tufts of leaves so common on the stem of young trees of this Cedar. A young Cedar of Lebanon, and a young *Wistaria sinensis* are the two most lazy plants we have, if they once take to being lazy; but that is not their natural way, for the Cedar can grow almost as fast as the Larch, and *Wistaria* faster than the Grape Vine. The reason for the slow growth of the Cedar is, principally, that a lot of bottom branches had been allowed to divide the strength and energy among themselves at the expense of the leader, and if they were allowed to stand in a free open space they would keep their advantage for very many years, spreading as far, on all sides, as the leader could rise upwards, and that is the reason why you see so many of them flat-headed. But cut out one-half of those bottom shoots, and stop the point of the other half, and away goes the leader immediately; and if you were to cut off every one of them, the leader would go quite as fast, that I am quite certain of; but then the want of bottom branches in a young Cedar-tree would look bad, besides hindering one from making a good specimen of it. The best plan is to fix on what is to be the lowest tier, and cut all the rest into within four inches of the trunk; the stumps, being all covered with leaves, will keep alive as long as you please without increasing in diameter, so that when you come to cut them off quite close the wood will be small

and easy to cover. This stopping process, or stumping, is often obliged to be resorted to by the best forest pruners when they have to deal with trees; I mean, any forest trees that have been long neglected. There is so much thinning to be done at once, that if the one-half of it were done in one season, many trees would suffer severely from it, and so they hit on this stumping plan, to arrest the swelling of such branches as they intend to remove ultimately.

D. BEATON.

(To be continued.)

LOOKING AROUND US.

THE last three weeks have been trying ones to the patience of anxious amateurs—the let-well-alone policy is one they are very slow to learn. Many an anxious look has been given to plants in cold-pits, when true prudence would have kept the glass shut, and the covering untouched, except for turning and breaking it. Writing this on the 9th, it is now more than three weeks since the plants in our cold-pits saw the light of day. I know the inside was cold enough, and, therefore, no air was necessary. The snow constituted a valuable protection until the 7th, when it began to melt rapidly. I have glanced in at a corner or two, and have no reason to be alarmed, but, as the covering is not thoroughly thawed, I shall leave it as it is a day longer. When first uncovered, if the day should be sunny, a little shading will be necessary. Air, too, after such confinement, should be given gradually, not too much at once. I mentioned, the other week, the importance of giving a little air, even if the covering was kept on several days, whenever the temperature within was high enough to encourage growth. The first opportunity should be taken to remove every damped or decaying leaf. In all structures capable of being heated, the keeping constantly covered would neither be necessary nor useful; but in severe frost, as we have had, the thermometer sinking from 10° to 22° below freezing, covering the glass, where practicable, becomes both useful and economical. The plants are not dried and drawn, and the coal-heap is saved; besides, a minimum of attention is required. Large fires pre-suppose frequent waterings, and admittance of air, too, when the plants would have been better in a cooler atmosphere, and without the admission of dry, frosty air. Hence, in a greenhouse, kept in mild weather at from 45° to 50° at night, I would prefer that that house should range from 35° to 40° during a few nights, with 10° to 20° below freezing out-of-doors. A gardener lately wrote to me, that he had covered all the pits and houses he could, though he could heat them, and he was sure, that with an outlay of a few shillings on litter, his plants would look better than some of his neighbours, who, in similar structures, had kept out frost by the cost of many pounds for coals alone.

Watering.—In cold pits, little of this will be required for some time to come. When the weather brightens, and a plant, or pot of plants, gets dry, it is best to lift the pot out, and replace it when drained. In houses heated, watering will be most wanted where the flue or pipe is hottest; and whatever needs it should have enough at the time to reach every root. In the case of a flue, the necessity of frequent waterings should be avoided in severe weather, by having evaporating pans, or vessels filled with water, set over the heating medium. This will prevent the atmosphere being dried. In mild weather it matters not whether these vessels are full or empty, as if there is no fire-heat evaporating from them will proceed but slowly. Much care is necessary in watering all greenhouse plants in frosty weather, and an effort should be made to spill as little as possible. A

little fire-heat with a frosty air outside dries the soil in pots very quickly. Such things as Cinerarias, Geraniums, and soft-wooded plants, show this before much mischief can be done; but in the case of Heaths, Chirozemas &c., if you wait until you see the flagging signs of dryness, you may pretty well take them to their last resting-place at once. Fine specimens of these should be examined by weight and striking their sides with a knuckle almost every day. In the case of the whole of the pea-blossomed fraternity of compact hard-wooded plants, such as *Gastrolobium*, and other allied genera, with a similar termination of "*lobium*," as was long ago demonstrated, they must neither be dry nor soaked, or the rootlets go to a certainty. Drainage, therefore, must be perfect; and, at times, the means mentioned the other week must be resorted to in watering, when the specimen is large. Any one of our readers as fond of fruit as they are of flowers, and who have succeeded in gathering Strawberries from January to March from plants that were runners the previous season, will have no difficulty in keeping these hard-wooded plants in just the right condition. Copious and good directions have been given about Strawberry growing, but when wanted early, a vast deal depends upon the watering. If left too dry, the fruit embryo is dried up; if too wet, a gouty dropsy is the result; and in winter especially, the disuse, or the ill-use of water affects injuriously our pot plants. Let the water during winter be always a few degrees warmer than the house.

Plants in Windows.—Judging from what little we have seen of window-gardening, many of our friends will have to visit the plant stores next season. Large fires, the dry air of the room, and the neglect of the water-pail at the roots, and the sponge over the foliage, have left nothing but dried skeletons, where a month ago all was fresh and luxuriant. The soil, in some cases, had been of a loamy character, and so thoroughly baked and hardened had it become, that with neither finger nor nail could I make an impression upon it. Whole tribes of Geraniums, Myrtles, &c., were not worth a brass farthing. Fuchsias presented the only hope, inasmuch as there might be vitality below the soil, though there was none above it. Others, to save trouble, had for three weeks kept their window-plants on the chimney-piece, or in a recess by the side of the parlour chimney, and their dusty, weakly aspect was enough to give one the blues.

A few, copying the example of our old friend, *Mrs. Think-in-Time*, had plants in their rooms almost sufficient to make us blush for our own. No dust had been allowed to fall upon them; the leaves had been sponged every week; the roots had been watered just as they needed it; not a vestige of a yellow leaf was allowed to remain; every possible ray of light was given when safety from frost was secured; and when cold was apprehended the plants were removed from the window, and covered up at night. The first mild sunny day the window will be opened a little, and by-and-by the plants will be set outside. Plants in living-rooms, however, suffer but little from close vitiated air; every opening of the door brings a fresh supply. It is the heat, and the dryness of the air from the fire that injures them; and these can only be counteracted by nearness to the glass in the day time, so as to cool, as well as have light, and a damp atmosphere by sponging and sprinkling the foliage.

Manure Water.—This, in a weak state, will now be of advantage to Cinerarias coming into bloom, Camellias in bloom and opening their buds, Chinese Primroses, Ageratums, Salvias, *Tropeolum Lobbianum*, *Lachenalia* showing bloom, *Cyclamens* ditto, Perpetual Carnations, Pinks, Scarlet Geraniums in a blooming state, &c. Most other things in a greenhouse should have clear soft water at this time.

Syringing.—This will be generally advisable, when, after some dull days, we have a sunny one—very likely the forerunner of a frosty night. If plants are as dry as safety will permit, they will stand an amount of cold they could not do when wet. In dull, foggy weather, the whole perspiring and elaborating processes of this plant are reduced to a minimum. A bright sun comes upon such plants, and finds them unprepared to meet him, and before their dormant energies are aroused, he makes them hang their heads like bulrushes. Now, ten to one, the plants do *not* require moisture at the roots, and a drenching there, with a frosty night succeeding, might require as many more coals from you as would keep a parlour fire for several days, if your house was large. A slight dusting over the foliage, in such circumstances, just as the sun begins to shine forcibly—nay, repeating the operation at mid-day, if necessary—would supply moisture for him to evaporate, without extorting it from the debilitated stems and foliage of the plant. Upon the same principle, after dull weather, we are often forced to shade tender plants from a bright sunshine, not because sunlight is not good for them, but because they are not prepared for its free action. Extremes must be avoided.

Air-giving.—This is another puzzler. I have mentioned, when in cold pits they may be shut up, and when air *must* be given. As a general rule, with an outside temperature of 36° to 40° in the shade, air may be given freely; but so as to keep out wet. With that temperature, and foggy, give none if you can keep the fog out; give a little if that is beyond your power. In cool greenhouses act on the same principle. Where plants are in bloom, or plants are forced, air must be given with more caution. Give little, or none, in very frosty weather; prefer letting your fires low during the day; and, if practicable, cover up at night. If several days of raw, cold, damp fog come, keep it out if you can. If it gets into the house, light fires to change the fog into invisible vapour, and give a little air at the top, just to let the moisture-laden air escape. This will prevent the evil of a stagnant atmosphere. With an outside temperature of 40°, and above, give air freely. When much below that, a free admission of air, except for an hour or two, would, in the case of greenhouse plants in general, be attended with a free use of the fuel heap.

R. FISH.

THE WOODS AND FORESTS.

PREPARING THE GROUND FOR A NEW PLANTATION.

(Continued from page 281.)

SUPPOSING the proprietor of some extensive moor, or mountain land, has determined, or been influenced, by some means or other, no matter what, to plant a large piece of those barren and bare portions of his estate, the first thing to do is to prepare the ground for the reception of the young trees. Draining is the first step towards that preparation. Without this important measure being well carried out vain will be the labour and expence of planting. I have, some three or four weeks ago, given an instance of the ill-effects of planting undrained land, and the beneficial effects it had on them when performed.

If the ground, then, is wet and springy, or any part of it, let that part be well and thoroughly drained. It will pay the expence in a very few years by the rapid and free growth of the trees. The next operation will be digging or trenching the ground. This is a heavy and somewhat costly operation, requiring a large amount of labour, and a no less large share of patience and perseverance; but wherever the spade and pickaxe can be used, the land intended to be quickly covered with timber must be digged, or even trenched. Far better

is it to only undertake to plant five acres at once, and do it well, than to plant fifty carelessly prepared. The practice, when I was a boy, was to let to nurserymen, by contract, a certain number of acres to be planted at so much an acre; the nurseryman to find labour and trees, and to fill up all vacancies that might occur through deaths for three years. This seemed a very excellent plan; and where the land was tolerably good, in some ten or fifteen years a fair sprinkling of trees did make some growth.

I was then in a celebrated nursery in the north, and often had to attend upon the men and carry plants for them. Previous to planting, a kind of pioneers were sent to what they called prepare the ground by *holing* it. This work was commonly done about August and September. If the ground would allow it, a turf, about a foot square, was cut off the surface, the soil underneath thrown out, and then the turf put into the bottom of the hole, and the soil upon it; but if the land was thin of soil, covered with brushwood, or fern, the *holing* was then done with a kind of mattock, one end of which was like a strong, thick hoe, and the other sharp and small, like a common pickaxe. With the broad end of this certainly powerful tool in the hands of a strong, willing man, the turf, or fern, was chopped off in a circle about a foot or fifteen inches diameter. Then the soil, or gravel, or marl, or whatever was underneath, was loosened with the sharp end of the mattock, and the hole was ready, as they said, for the tree. This operation was often relet by the nurseryman, and was, or was not, properly done, as the case might be. The price, if I remember rightly, was miserably low, so that too frequently the men only half did the work, in order to count a greater number of holes, and thereby earn more, or, at least, obtain more of their scanty pittance. Then, when autumn arrived, the trees were torn up out of the nursery beds, a kind of hodge-podge mixture was concocted, and the trees were thrust into these prepared holes or holings. The men should have opened the holes deep enough for the roots, then set the tree in the centre, and fill in the loosened stuff, whether gravel, sand, or soil, or a mixture of all upon and amongst the roots; but too frequently, in order to get in a certain number before night, the spade was merely thrust in about the centre of the loosened soil, worked backwards and forwards, till a kind of chasm was formed; then the roots were crammed in and the soil closed, and this was called preparing and planting a forest.

In some situations this mattock would be an excellent tool, no doubt, for preparing the ground, and the previous summer a proper season to do the work in. Steep hill sides, covered with small stones, with here and there patches of gorse heath and rough grass, in such places this mattock would be the very best instrument for the purpose; but then the whole surface should be mattocked over, and all brambles, whin bushes, or heath, stubbed up, and either burnt or laid in heaps to rot. With this instrument the most barren hill, or mountain, might be prepared, so as to receive and grow trees well.

It is well known to many persons that in Hampshire there are large tracts of hilly land on which there is the scantiest of all herbage, and scarcely an inch of mould. About forty years ago, the late Lord Calthorpe came into possession of a large tract of such land in that county. He was then a young, enterprising man, full of benevolent feelings for the poor on his estate, and therefore he immediately set them to work in preparing the barren parts of it for the reception of trees. So little soil was there that every particle that could be found was laid in little heaps, and when the planting was commenced not more than a spadeful could be allowed to each tree. Yet, so well were they planted and managed under his own eye, that ten years ago, when I sojourned for a short period in the neighbourhood, the

trees had progressed so as to give the what was once a bleak waste quite a woody appearance. These hills are now covered with very fair timber, and this instance of great success in making the wilderness to smile, even in the owner's life-time, ought to stimulate all proprietors of waste lands to go and do so likewise.

T. APPELBY.

(To be continued.)

THE TUBEROSE.

THIS fine, sweet-scented flower, *Polianthes tuberosa* was introduced from the East Indies so long since as 1629. The tuberous roots are grown in Italy as an article of commerce, and are brought over in considerable quantities to this country annually. They are mostly imported by the Italian warehousmen in London, and come generally along with Orange and Lemon-trees, the large flowered Jasmine (*Jasminum grandiflorum*), and the Arabian Jasmine (*Jasminum Sambac*). As this is the season to purchase the roots of the Tuberose, and plant them, I trust a few remarks on its culture will be acceptable and useful to the readers of THE COTTAGE GARDENER.

Soil.—The soil I have found to suit them best is a rich, alluvial loam, mixed with about one-fourth thoroughly decomposed hotbed manure, or two years' old cowdung, well reduced, will answer admirably. If the loam is not naturally sandy, a sufficient portion should be added to the compost. I find river-sand, sifted so as to clear it from stones, the best kind of sand for the purpose.

Pots.—The diameter of the pots should be, for one tuber, 5 inches; for two, 7 inches; and for three, 8½ inches. The pots should be chosen as deep as possible, because the roots of the Tuberose, like all other bulbs, descend rapidly and deeply into the soil. The pots should be used quite clean, and must be well drained. Previously to potting the roots all the small side-shoots should be carefully rubbed off, as well as all the remains of the old withered roots and leaves. This dressing of the bulbs must be done with care, so as not to injure or wound the main tuber. The Italians, I suppose, send them over with all these excrescences on them to make them look larger, or, perhaps, to preserve the main tuber. When they are thus cleaned let them be potted.

Planting.—Fill the pots with the soil, and press it firmly down, leaving the pot so full as to allow the neck of the tuber to be level with the rim of the pot; then insert one, or two, or three, as may be thought most convenient, in each pot in proportion to its size, filling the earth in firm round each tuber. I have grown them equally well in all the three sizes, but for placing in a conservatory, when in bloom, I should recommend the largest size, and three tubers in each pot. The tuber only produces one flower-stem, though each stem produces sometimes as many as ten pairs of flowers.

Varieties.—There are two varieties, namely, the single, and double. The latter, generally, is preferred, though I think the single equally beautiful. The flower-stems rise to the height of from three to four feet, and, consequently, in a conservatory, the pots should be on a level with the floor, to bring the flowers nearer to the eye; hence, three flower-stems show much finer and to greater advantage than one. When used only as cut-flowers, the one-tuber-in-one-pot system might be adopted. I imagine the flowers are somewhat finer and larger by that method. Where few are grown, too, it may be desirable to put one or two bulbs only in each pot. A succession of bloom may be obtained by potting a batch in February, and a second in March, and a third in April—later than that will not answer well. In order to be certain of a good bloom choose the soundest

tubers only. If the central part feel soft, or is decayed, throw such away at once—they are worthless, and will only disappoint the cultivator if potted and attempted to be grown.

Culture.—When all are potted, then plunge them in a very moderately-heated bed of tanner's bark, or fermented leaves. I always plunged them in such a bed made in a deep pit, and seldom failed to bloom every tuber, though I have frequently witnessed a failure where they were merely potted and kept in a warm house without plunging. Of course, the different batches to be bloomed in succession were plunged at different times. And here I would remark that this East Indian plant would do best by being excited into growth by bottom-heat, whilst such bulbs as the Hyacinth, Narcissus, &c., require, previously to being placed in heat, plunging in a cold material, until new roots were formed, whilst the Tuberose requires a moderate bottom-heat at first to start the roots into growth. As soon as the leaves begin to spring from the top of the tuber then commence watering, giving small quantities at first, and increasing as the growth advances. Numerous leaves soon appear, and when the growth is vigorous so that the leaves require a large amount of support, then give the plant some weak liquid-manure every third time of watering.

As the season advances give plenty of air on every fine day to prevent the leaves from being drawn. The flower-stems will soon be seen pushing up from the centre of the leaves. They must be watched daily (for they grow very quickly), and as soon as they come to within six inches of the glass lift them carefully out of the pit. It will be found necessary to place a stick in each pot, and tie up to it all the leaves, as well as flower-stems, nearly their whole length, or they will infallibly be broken if removed without this precaution. Place them in a warm greenhouse, or intermediate stove, for having got the flower-stems fairly started they are sure to bloom. The great difficulty is then overcome. Afterwards, give plenty of water, and use the syringe freely, to prevent the attacks of the red spider, till the blooms begin to open, when the syringe must be dispensed with, and the plants removed into a cool greenhouse, or conservatory, to prolong the bloom.

The late R. Salisbury, Esq., wrote a long paper on the culture of this plant, so as to bloom the young sucker, and thus save the trouble and expence of importing them; but really the price of imported full-grown blooming bulbs is so reasonable, that the saving is very questionable; the nurserymen only charge four shillings a dozen for such roots. Now, to grow a sucker, or side-shoot, from its being separated from the parent bulb to blooming, requires a large amount of care, trouble, and expence; and at least three years, even if successful, to accomplish it. I think there are few cultivators, if any, that would not buy them full-grown and ready to flower at once, rather than be at all this trouble and expence of growing the small roots into a blooming state.

T. APPELBY.

SEA-KALE.

It has been justly observed that there are few things which are not better when grown in a natural way than forced, but one of those few is, assuredly, "Sea-kale,"—not that it is entirely useless grown in a state of nature, but that it does not then possess the qualities we have long looked upon as constituting its principal merits. One of these qualifications is that crisp tenderness which in a blanched condition it receives, differing in this respect from Asparagus, which, when not allowed to show its head above ground, is said to eat sticky and tough, the under part being, in fact, unfit for food.

However, the reverse is the case with Sea-kale, for with its fibre and other woody matter would seem to be more fully formed when exposed than when blanched up in the confined manner it is when forced into use; nevertheless, means may be taken to direct the efforts of nature to produce a different article, as by covering over the crown of the plant with something that will exclude the air a certain degree of blanching takes place, depriving the young shoot of the woody fibre and the strong taste, which, in common with some other members of the Cabbage family (to which it is in some degree related) is much diminished; and the article, with good management, has all the crisp tenderness of the forced production, with more of the vigour and strength of the last-named than the more forward crops could boast of. Now, as this is easily attained by very humble means, and coming into use when ordinary garden vegetables are far from plentiful, it may not be altogether useless here to point out the way, adding a few words, in the first place, on forcing in general.

For the earliest crop of Sea-kale, I have, for many years, been of opinion that plants reared on good ground in one season, with single eyes, and of such a size as to resemble tolerably well-grown Carrots, are best adapted for the first crop, by being taken up carefully and inserted in soil that is heated in some way for that purpose. The amount of warmth necessary is much less than is often supposed—nevertheless, it must be forthcoming, or the result will be unsatisfactory. However, there are often odd corners in which a quantity might be stowed away with ease, which could not be made available for anything else. The mushroom-house is often applied to this purpose, and is a very good place, as is also any heated corner in connection with the hothouse fire, as the amount of heat is the only requisite qualification, light being of no consequence—in fact, it is better without it, except so far as arranging the plants and examining them afterwards is concerned. For early work, the plants ought to be taken up as soon as the leaves drop off; in other words, “when they are ripe;” and it is of the greatest importance to take them up with as little injury as possible—for, as the future produce is, in a measure, the development of the stored-up matter contained in the crown, or incipient bud, assisted by what little nourishment the plant can draw from the medium it is placed in, it follows that the latter cannot be expected to supply much if all those small rootlets, which ramify in various directions for food, be all cut off in the taking up or replanting process, and, as they are very tender, and easily broken, it requires great care to ensure their doing well. Some growers put the roots in pots—some half-a-dozen roots, or so, in a large, deep one; but as these must be very large, and difficult to remove, I have generally contrived to do without them, by planting the roots tolerably thick on the heated place, giving a final coat of ashes at last, and over this something that will keep the place dark, and somewhat moist: some very homely contrivances will effect this well enough.

It would be as well to remark, here, that when a supply of plants like the above are wanted yearly, a corresponding quantity must be sown every spring; and, as I have observed they may be reared in one season, it is only fair here to observe that it is only on good ground that such can be done, and, when that is not effected, two-year-old plants must be substituted—these, however, have generally more crowns than one to a root, and, consequently, are not so good. Nevertheless, they may be used when single ones are not to be had. It is almost needless here to observe, that in preparing plants for forcing the seed should be sown where the plant is to remain, and, by being properly thinned in time, a good, useful produce will generally follow. Very small plants, standing one year, may be

transplanted during winter, and in summer, by being regulated a little in the way of curtailing the head, a very good plant may be obtained for forcing.

For the later crop, beginning with February, and following on to May, plants in the open ground may be more advantageously forced in country places, where leaves or other heating materials are at hand, by being covered up with the heating matter, pots being placed over the plants, with lids, &c., as is generally known, and the heating matter being applied between, imparts a warmth to the ground which urges on the growth of the new vegetable in such a way as to bring it to a size fit for table in about three weeks or a month after the fermenting matter has been applied. This, of course, will depend upon other circumstances as well, only let it be remembered, that after January the amount of heat requisite for forcing is much less than before that period, and the plant is also much better able to endure the process than when done earlier, and the produce is also considerably stronger, and gradually improves in that respect as the season advances, and forcing becomes a mere matter of assistance. This, however, will be easily understood; and those who wish to have a dish of Sea-kale before Christmas must not expect to have it so strong and fine as if they waited later for it; but the sacrifice is generally made without a scruple.

Much of the well-being of Sea-kale depends on the treatment the plants receive during the summer months. If they are left to run wild, flowering and exhausting themselves in a useless way, the produce must not be expected to be good, as it can hardly be expected that a ripened crop of seed can leave the plant which produced it with all its “stores” unimpaired; on the contrary, the nutriment which ought to have been stored away in embryo has been used to perfect the crop of the past season—on that account, therefore, let no plants seed, unless a few to produce the quantity that may be requisite to sow the crop wanted the following spring. It is scarcely necessary to add, that enriching matter is also needed to assist the growth of the plant, and, if that could be applied at the growing time the result would be more satisfactory. Liquid-manure and a little salt might be applied at that time to advantage, and the ground-stirring, and other modes of good cultivation, being carried out, a crop may be expected; but the usual summer treatment has in other places been dealt with, that it is unnecessary here to repeat it, only it may be worthy of notice to all who are contemplating a new plantation to call their attention to the nature of the ground where this plant is found wild—the sandy shores of the sea-side—and by that they will have a hint what description of soil is best calculated to ensure a good growth afterwards.

J. ROBSON.

MANAGEMENT OF DOWN EWES AS BREEDING STOCK.

(Continued from page 284.)

THE time at which the Tup should be turned in with the Ewes will depend, in some measure, upon the district where they are kept; for, except in those localities where the soil and climate are good, it is useless to attempt early breeding; not only will the habit of the stock oppose this, but the cultivation of the land also, for in cold, backward situations, the stock must depend more upon the summer-keeping, as in that case the greatest increase and requirements of the flock will take place at the period when such land is capable of yielding its greatest produce. Whereas, the better

descriptions of soils may be made to yield the largest amount of produce for Sheep-keeping in the winter and spring months, and are, consequently, capable of sustaining a large increase of stock, although it may take place a month or six weeks earlier than usual. It is, therefore, best to decide upon the breeding season, and regulate it as much as possible according to the influence of the before-mentioned circumstances. The method of feeding and general management of the Ewes, from this period until Lambing-time, having been rather fully treated upon in my former contribution upon their treatment on grazing farms, I intend, now, to make only a few general observations, showing the distinctions necessary to be made between a Grazing and Breeding flock. In the breeding flock there is always a proportion of young Ewes, which circumstance, coupled with the fact of the difference in the nutritious and forcing properties of the food produced upon grazing, as compared with breeding, districts, greatly reduces the risk of disease and loss in the latter at the Lambing time, particularly if due regard be paid to keeping of the flock, and to the change of food, and regularity in the time of feeding.

I must, however, here remark upon the practice of stock breeders who feed their meadow-land in the autumn and winter months; for I have known flocks often become unsound from this circumstance, when the season has been continuously wet. Yet it is not, in my opinion, the mere fact of feeding the stock in the meadows which has induced the Rot, or disease of the liver, so much as the want of judgment displayed by the flockmaster, in not allowing a regular change of food, whereby the meadow-grasses are made available in conjunction with the produce of arable land at the same time. I hold the opinion, that Ewes, when they are kept entirely in the meadows, in a wet season, for a period without change of food, or lying, will be subject to the Rot; whereas, the produce of the same meadow-land may be consumed by the Sheep, if they had at the same time the produce of arable land, with the further advantage of lying upon the same; and, although strong arguments have been urged in support of the theory that the eggs of the flukes are taken into the system with the grasses of particular localities on which they are deposited, I am of opinion that it is neither more nor less than the animal taking into the system an undue quantity of water, which produces the fluke in the ducts of the liver, this being known to graziers as the incipient stage of the Rot in Sheep.

I must here mention, that the best known antidote to this disease is feeding the animals upon salt marsh-land. Where this is not available, an admixture of a small portion of common salt with their ordinary food is advantageous. I further urge the great necessity of keeping lumps of rock-salt in the field, to which the stock can gain access at all periods of the year.

In continuing the subject, I must here observe, that the Rams must be taken away from the Ewes at such period as may be desirable, for upon most farms it is best that the Lambs should come well together, in order

that they may be all weaned at the same time. From this time, until the Ewes commence lambing, they should be kept in a moderate manner, and with great regularity, having regard to change and variety in food, rather than to the use of gross and luxuriant keep; and it is best to keep them as long as possible upon the grasses, not allowing them roots until necessity compels, and when they are given, the Swedish turnips are the best for the purpose, together with a fair quantity of good sweet hay. After the above management has been carefully carried out, a prosperous and prolific Lambing season may be seasonably anticipated. It will then be necessary to be provided with a sheltered fold-yard, the method of making and conducting which has been described in detail in my former paper upon the treatment of Down Ewes for grazing; in addition to which, I have only to say, that additional space should be provided (in case of inclement weather) for the young Lambs, which, with their mothers, should receive accommodation by shelter and good feeding, until they are sufficiently strong to bear the exposure of open field feeding.

In stock flocks, where the Wether Lambs are reared for sale as stores, they should not be castrated so young as when intended for sale as fat Lambs. It should, therefore, be deferred until the Lambs arrive at the age of six or seven weeks. This method will greatly improve them for grazing purposes; the animal frame being more fully developed, and having more flesh and constitution, they will be able to carry a greater weight of mutton at a given age; and even in the poor state, when offered for sale, the general appearance and outline of the animal will be better appreciated, and rendered more valuable to the purchaser. As soon as the Ewes and Lambs are able to enter the open field for root-feeding, &c., they should be kept in accordance with the rules of useful and moderate feeding; but, in some cases, high and even artificial feeding may be profitably resorted to when the land will bear the excess of manure. That portion of the Ewes which have Wether Lambs and twins suckling, may be advantageously divided from the other portion which have Ewe Lambs, and may be fed with oil-cake, and peas or beans in mixture, receiving also a full allowance of the best hay, and a continuous supply of cut turnips. These being the sale Lambs of the next summer or autumn, they will improve in value in proportion to the food given, if supplied to them with regularity and judgment. The remaining portion of the flock, being Ewe Lambs, may be kept somewhat different, and should have a liberal supply of the best hay, and cut turnips, which food will be sufficient to raise stock of good size and constitution, supposing the ordinary method of feeding has been acted on. The Ewes of both divisions of the flock will do well for themselves, and afford plenty of milk for their offspring, when allowed a sufficiency of turnips, and as much as they can eat of good field hay. They should, however, have common turnips for the first month or six weeks, after that time Swedish turnips are best, which should be continued as long as they possess their nutri-

tious properties, which, by the method I have described in my paper upon the preservation of Roots, they will do until the middle of the month of May. And, indeed, from the middle of the month of April, where farms have water-meadows attached, the Ewes and Lambs may have hurdled-off for them a portion of grass every day, returning to the field for root and hay feeding in the evening. After the Swedish turnips have been all consumed, Mangold Wurtzel will be just coming in season for feeding, and it is an excellent kind of food for the Lambs to have cut and placed in troughs, in advance of the Ewes, throughout the summer, and, by preserving a sufficient quantity, they may be used for this purpose until the Lambs are fit for sale at the summer fairs. I do not hesitate to say, that stock Lambs of the very best description may be made at a far less cost from cake and corn than when they receive grass only in connection with those artificial feeding materials. The green crops of different kinds will now, after the Turnips are gone, be coming into use; and those crops, such as Trifolium, Tares, &c., should be given only as a change, which food they should get hurdled-off for them during the day, and in the evening they should be allowed to return to grass, or Saintfoin, where the Lambs should receive their trough food. This mode of feeding will not only effect the consumption of all these crops in due season, but will furnish abundance for change and mixture in feeding, so essential to the profitable feeding of stock sheep. The kind of food just spoken of will carry the stock on to the period when the Lambs must be weaned; and this is an important operation, and should be done with care and attention. The best rule is to remove the Ewes from the Lambs, rather than the reverse, as the Lambs will be more contented if they are allowed to run and feed in their former haunts; for in case they are taken away from the Ewes, and removed to a strange place, they will become exceedingly restless, and it is often some days before they take to their food willingly. The Ewes, when removed, should, if possible, for a few days be sent to a distant part of the farm, and out of hearing of the Lambs, otherwise the call of the Ewes proves a source of great disquietude to them.

The wool of a stock flock is of great importance in the economy of sheep-farming, and, as it is a double question, I should observe, that upon the hill farms the Ewes should not be shorn too early, as it may be deferred until the middle of the month of June, with advantage to the fleece and the animal. There is, however, another very important operation in connection with the growth of wool, namely, dipping them in solutions of poisonous compounds, whereby the lice and ticks in the wool are destroyed, it being, at the same time, the means of improving the growth of wool, as well as the health and condition of the stock. There are many of these compounds, all containing arsenic, in use, but that known as "Bigg's" is very suitable, as well as the method of dipping by his improved apparatus.

JOSEPH BLUNDELL.

POULTRY SHOWS.

THE CORNWALL SOCIETY'S POULTRY SHOW.—When we hear of a Poultry Society having held its "third" annual meeting, we are ready to assign respectable antiquity to such a body, and enquire, with some interest, into the practical results that may have been thus attained. In the present instance, the "Cornwall Society," being the first institution of this kind formed in the west of England, has reached this point in its career, and not merely has its exhibition, year by year, progressed satisfactorily, both as regards the quantity and quality of the pens exhibited, but the poultry-markets throughout the neighbourhood are now, by general admission, far better supplied than was the case in former years. This latter fact is, after all, the main point by which we must estimate success or failure in these societies; for we are firmly persuaded, that without the prospect of improving our breeds of poultry, in a strictly economical point of view, the denizens of the poultry-yard would never have occupied their present position in the public favour.

The Corn-chamber in Penzance, was, as previously, the site selected for the show, and although an addition of fifty pens appeared in the catalogue, beyond the entries of the last year, abundant accommodation was provided for the whole number.

In *Spanish*, the first prize was withheld in both classes, no pen being altogether free from a ruddy tinge on the faces of some of its occupants. Many of the birds were well-shaped, and shown in good condition, but the absence of a main characteristic of this family could not allow them any higher position.

Coloured Dorkings, both old and young, had the first prize pens from the yard of George Williams, Esq., of Trevince, near Truro, while the second prize fell to some good chickens belonging to Wm. Bolitho, Esq., of Chyandour. On looking carefully at several of the pens in these classes, we would suggest that mere bulk and weight should not alone be aimed at, since form and symmetry may be present at the same time with the former good qualities, and, if so, would certainly be an additional recommendation of the fowl combining these advantages. The higher bred the bird, provided size is duly regarded, by so much the larger quantity of flesh will appear on the more profitable portions of its body, with a corresponding decrease of offal. A glance at the prize Dorkings at the recent Birmingham meeting would fully bear us out in the recommendation we offer to Dorking breeders, to seek form as well as substance.

In *White Dorkings*, which were more numerous represented than usually happens, all the prizes in both classes fell to the birds of Augustus Smith, Esq., of Trescow Abbey, in the Scilly Islands; notwithstanding a rough passage, the winners were in beautiful feather, and from the number of pens claimed must be popular in this neighbourhood.

In the whole class for *Buff Shanghaes*, Mr. Lawrence, of Rosemoran, near Penzance, came first, and beyond all question, his position of honour was duly merited in every respect. The second prize was taken by Mr. Branwell, of Penzance. Turning to the young birds of the same colour, we find the name of the Rev. W. W. Wingfield as the owner of the well-shaped and good-coloured birds that took the first prize; while equal seconds were awarded to Messrs. Gittus and Welch. Highly commended, and the more limited token of judicial approbation, appeared affixed to numerous other lots in this division of the show. Mr. Lawrence had a second prize for his *White Shanghaes*, and the names of those who won in the chicken class included the Rev. W. W. Wingfield, Mr. Lawrence, and Mr. Burton, of Truro. To the latter gentleman was also awarded a first prize for his Partridge-feathered chickens, while Mr. Gittus took a second for his pen of old birds of the same colour.

The circumstance of a cold, wet autumn, and, consequently, a late and unfavourable moulting season, has, hitherto, told against the appearance of the adult Shanghaes, and their temporary depreciation in popular estimation, has, therefore, been apparent. This, we must say, is evidently unjust towards a race of fowls, possessing, as these do, such undoubted claims to be considered among the most

generally useful members of the poultry-list; and is far more, we think, to be ascribed to former undue claims on their behalf, and extravagant price to which, in many cases, they were run up for the purposes of speculation, than to their having really fallen short of those qualifications which were asserted for them by their wiser friends. In many localities, where a limited range only can be afforded, no fowl will answer better; and since these conditions are necessarily attached to the circumstances of many poultry-keepers, we have no fear but that their merits will long sustain them in their just position.

The *Hamburg* classes formed no exception to the usual character of these birds as at present shown in the southern districts of England, and which we have spoken of as far behind their appearance in their more favourite northern localities. This remark would apply still more strongly to the Pencilled than to the Spangled varieties; among the latter, Mr. Wingfield exhibited a pen of Gold-spangled birds of great beauty, but these having only recently passed into his possession were not qualified to compete for any prize.

But *Game fowls* should have had precedence of *Hamburgs*, in the order of the prize-list; and the specimens of this race that were here assembled had the fullest right to hold their own, for better birds have, probably, never before been exhibited at a merely local show of this description. In the pen of Duckwings, belonging to E. Rodd, Esq., of Penzance, every point required in the Game fowl was seen to the best advantage; it would, indeed, have been difficult to have found a fault of any kind with these truly admirable specimens. Black-breasted reds, with both white and yellow legs, followed in their several pens, the latter taking the lead, though when we came to the chickens the former had the pre-eminence. The whole class was pronounced "highly meritorious," and certainly appeared to us as most fully meriting this commendation.

The *Polands* were also good, especially the Golden, and some White birds belonging to Mr. Lawrence; the former being the property of Mr. Burton, of Truro.

Of *Bantams* we can say but little, since they were few in number, and moderate in quality.

Geese, as was fitting with the exhibition of a society whose principal object has been the benefit of the farmer and the cottager, came out in great force, the first prize in the old class, and the first and second, also, in the young, being assigned to Mr. Wingfield; the first-named pen containing Toulouse birds, the second half-bred between Toulouse and the common English Goose, and the third Toulouse again. George Williams, Esq., had a second prize in the first, and was commended in the second class.

We must repeat the Judge's general approbation of the *Ducks*. Mr. Bedford's Aylesbury's were admirable, also the black East Indian, belonging to that same gentleman. Mr. Wingfield's Rouen Ducks were pure specimens of that breed, where form and colour have been but too commonly sacrificed to mere size by the introduction into the yard of large specimens of the common breed, so that both their productiveness and the flavour of the flesh have hence suffered deterioration. The true plumage of the Rouen breed is that of the wild mallard and duck in their respective sexes. Among Ducks of any other variety were several pens of very large dun and brown birds.

In *Turkeys*, Mr. Williams was all-successful, every prize falling to his pens. Mr. Lawrence exhibited, as extra stock, some good American Turkey Poults.

The *Pigeons* well deserve favourable notice, for nearly every class was well represented, and if we give special notice to any, it must not be regarded as any slight to the remainder. Thus, the White Trumpeters, belonging to the Rev. T. Phillpotts, of Porthgidden, must certainly have honourable mention, for better birds of this variety it has never been our good fortune to behold. The Nuns, Turbits, Owls, Fantails, and one pair of Almond Tumblers, were also of great excellence.

And, now, one short sentence of advice to exhibitors generally. Select your birds that are intended to be sent to an exhibition with greater care. If it is worth your while to send any, it is surely worth your while to send the best, and for you, or those who have the charge of them, to see to their being properly matched to each other. How

much disappointment follows a neglect of this caution, the echoes of any exhibition would easily testify; with two or three good birds there constantly appears one so manifestly deficient in important points, that the whole pen is unavoidably passed over, and a more even pen of birds, possibly inferior to some in the defective pen, is justly preferred. Again, do not keep up, or "fat" your birds for exhibition; a little extra care, a little more nourishing food may be advisable, but there is no intention, on such occasions, to show "fat" poultry, and birds in this state will neither appear to so much advantage as those with whom little beyond their ordinary treatment has been had recourse to; nor are they in an equally safe condition to encounter the fatigue, and consequent disease, to the chance of which, after our utmost care, they must be subjected by so violent a change in their usual habits and treatment.

By this time the points of excellence should have been sufficiently understood to prevent the annoyance of defeat where green or olive-legged White Shanghaes, Polands with bronzed wings, White Dorkings, and White Bantams with blue legs, and other similar apparent imperfections have marred the effect, and lost the victory, to other really good specimens in the same pen.

To the judge, James Furneaux, Esq., of Scilly, near Plymouth, the author of the useful and amusing pamphlet, "*The Poultry Pentologue*," the thanks of this Society were justly rendered, the decisions being such as might have been anticipated from a gentleman who has studied this subject with such long-continued attention.

TRURO POULTRY SOCIETY.—The Second of the Annual Poultry Exhibitions, which it is proposed to hold at this town, came off on the 5th and 6th of January last. A considerable increase in the number of the pens occupied over those of last year, and the general character of their tenants, evidenced the continued attention of the poultry-keepers of the West of England to the objects of their care.

In the adult *Spanish* there were seven pens, of which, No. 11, belonging to Mr. W. G. Bennett, of Truro, took the first prize; the second falling to Mr. Blee, of Penzance. The chickens of this breed were of moderate quality, and the rubicund countenances of even the prize-birds were very far from what we should desire to see in specimens occupying that position.

When we come to the *Coloured Dorkings* we must reiterate our opinion expressed with reference to this same family at the Penzance Exhibition, for they were generally coarse, and in indifferent feather; and the introduction of better blood is here manifestly required. The pens of the *White* variety were far better filled; and here Mr. Smith, of Scilly, was successful in the old birds; Mr. Hawke, of Truro, in the young.

In the adult *Buff Shanghaes*, we should have been inclined, we think, had the choice been permitted us, to have taken pen No. 43, belonging to Mr. Lawrence, of Penzance, which received the second prize, rather than that belonging to Messrs. C. E. Andrew and Co., No. 41, which was placed above them on the prize-list, since in point of form, feather, and condition, they appeared to us of greater merit, although it might, certainly, be urged, that Mr. Lawrence's pens had somewhat too much cinnamon for the cock. In chickens of the same variety there were many meritorious birds exhibited, Mr. Blee, of Penzance, taking the first prize, with the same birds, as we believe, that carried off the second prize at Penzance last week. In both these last classes there were many commendations, and notwithstanding the late unfavourable moulting season, the condition of the specimens was generally good, although, in several instances, the presence of a faulty bird, as too often happens, ruined the pretensions of companions that might otherwise have been distinguished. The brown and partridge-feathered pens, beyond a good cock belonging to Mr. Burton, of Truro, in No. 79, contained nothing calling for especial notice.

White Shanghaes were very fairly represented, and the Judges were probably occupied for some time with the prize pens in either class. If our adherence, indeed, to the judgment ultimately pronounced is a matter of doubt, we would much rather assign any difference of opinion to the fact that our inspection of the competing pens took place by gaslight only, when many points are necessarily the more involved in doubt.

Game Fowls generally were good, and the first prizes, in both the adult and chicken classes, were allotted to pens belonging jointly to the Rev. W. Wingfield and Mr. Pascoe Grenfell, of Gulval; and Mr. Mitchell, of Truro, took a second prize in the first-named division.

The *Golden Pencilled Hamburgs* deserved their honours, Mr. Miller, of Truro, receiving the first, and Mr. Grenfell the second prize for old birds. A first prize was also awarded to the Rev. W. Wingfield for his golden-spangled specimens.

The *Silver Hamburgs*, however, did not rise above their usual level in these parts; while *Polands*, the white-crested black excepted, were good.

The entries for "any other distinct breed," seemed, in several instances, to have been made without due reference to the regulations, since "*cream-coloured Polands*" should have appeared with "*Polands of any other variety*," and "*Golden-spangled Pheasants*" should, of course, have taken their place along with the *Hamburgs* of that denomination. Three pens of "*barn-door-fowls*" were also here submitted to inspection, but surely their owners were over-confident in claiming for them the dignity of a "*distinct breed*."

Bantams were but an average lot; but many of the *Ducks* were meritorious; while *Geese*, being limited by the prize-list to "*birds exceeding one-year-old*," were necessarily limited in number; we are at a loss, indeed, to understand the reason of this restriction, for *Geese* of the year, if not allowed a separate class, should, at least, be permitted to compete with their seniors.

Turkeys were numerous and good, and among the *Pigeons* were many excellent specimens.

Class 46, for "*extra stock*," had the following notice appended in the prize-list, "*Extra prizes will be awarded to any deserving specimens of Water-fowls, Pheasants, or other birds, but all fowls, Bantams included, must be shown in the regular classes appointed for them.*" We were, consequently, surprised to find pens of *Shanghaes*, *Dorkings*, *Game*, and *Bantams*, in this division. For many reasons, we apprehend, it would have been more desirable to have adhered to the strict letter of the regulations. "*Peregrine Falcons*," strange neighbours to the poultry, here received a prize.

Brahma Pootras and *Spanish* were exhibited by Mr. E. Simons, of Birmingham, to whom, in conjunction with Captain Mansell and Mr. Seldon, of Falmouth, the task of adjudication had been confided.

The Secretaries, we fear, must have had an arduous duty imposed upon them, since the Market-house, in which the Show was held, could not be given up to them for their preparations till nine o'clock on the evening immediately preceding the day of exhibition, and as the birds were to be in their pens by eleven o'clock on the following morning, it is highly creditable to those gentlemen, Messrs. W. H. Jenkins, and John R. Paul, that the necessary erections were completed within the proper time. The Judges, also, must have worked hard to have finished their arbitrations within the period allotted to them.

In one respect, the Truro Society have deviated from the usual routine lately followed by Poultry Associations, for their prize-list divided the several varieties into two classes, that for "*birds exceeding one year old*," and "*chickens hatched in 1853*;" but, at the same time, their second rule stated that "*chickens of 1853 can be shown in the classes for fowl above one year old.*" Now, surely, if separate classes are allotted to the adult and young birds, it is far better to keep them apart, and this not less for the sake of the exhibitor than of the judge; while the prize-list and catalogue, as above quoted, seem to contradict each other, since the wording of the first-named class, if intended to admit chickens, should have been not "*birds exceeding one year old*," but "*birds of any age*."

The prospects of the present year, as based on the results of that which has just closed, are most encouraging to Cornish Poultry-keepers; and we trust that another season will so enable them to mature their arrangements, that other counties may be induced to contribute still more largely to these annual exhibitions.

Class 1.—*SPANISH*.—First prize, Mr. W. G. Bennett, Truro. Second prize, Mr. Alfred Blee, Penzance. Class 2.—*CHICKENS OF 1853*.—First

prize, Mr. John Thomas, Truro. Second prize, Mr. W. J. Lawrence, Gulval.

Class 3.—*DORKINGS (Coloured)*.—First prize, Mr. G. W. Williams, Trevince. Second prize, Mr. G. Williams, Trevince. Class 4.—*CHICKENS OF 1853*.—First prize, Mr. George Williams, Trevince. Second prize, Mr. James Gatley, Truro.

Class 5.—*DORKINGS (White)*.—First prize, Mr. Augustus Smith, Scilly. Second prize, Mr. G. Williams, Trevince. Class 6.—*CHICKENS OF 1853*.—First prize, Mr. Charles Hawke, Truro. Second prize, Mr. W. H. Christie, Truro. Extra second prize, Mr. Augustus Smith, Scilly.

Class 7.—*SHANGHAE OR COCHIN-CHINA (Buff or Cinnamon)*.—First prize, Messrs. Andrew and Co., Redruth. Second prize, Mr. W. Lawrence, Gulval. Class 8.—*CHICKENS OF 1853*.—First prize, Mr. Alfred Blee, Penzance. Second prize, Mr. Edward Burton, Truro.

Class 9.—*COCHIN-CHINA (Brown)*.—First prize, Mr. E. Burton, Truro. Second prize, Mr. Sydney Godolphin, Tremough.

Class 11.—*COCHIN-CHINA (White)*.—First prize, Mr. E. Burton, Truro. Second prize, Mr. W. Lawrence, Gulval. Class 12.—*CHICKENS OF 1853*.—First prize, Mr. E. Burton, Truro. Second prize, Mr. W. Lawrence, Gulval.

Class 15.—*MALAYS*.—First prize, Mr. T. Mayne, Penzance.

Class 17.—*GAME FOWL*.—First prize, Rev. W. W. Wingfield, and Mr. P. Grenfell, Gulval. Second prize, Mr. H. Mitchell, Truro. Extra prize, Mr. W. Pascoe, Feock; ditto, Mr. W. Hooks, Truro. Class 18.—*CHICKENS*.—First prize, Rev. W. W. Wingfield, and Mr. P. Grenfell, Gulval.

Class 19.—*GOLDEN-PENCILLED HAMBURGH*.—First prize, Mr. T. N. Miller. Second prize, Mr. P. Grenfell, Gulval.

Class 21.—*GOLDEN-SPANGLED HAMBURGH*.—First prize, Rev. W. Wingfield, Gulval.

Class 23.—*SILVER-PENCILLED HAMBURGH*.—First prize, Mr. P. Grenfell, Gulval. Second prize, Mr. T. N. Miller, Truro.

Class 25.—*SILVER-SPANGLED HAMBURGH*.—First prize, Mr. T. M. Hawke, St. Day. Second prize, Mr. T. Woolfe, Redruth. Class 26.—*CHICKENS OF 1853*.—First prize, Mr. E. Burton, Truro. Second prize, Mr. N. C. Stephens, Truro.

Class 29.—*POLAND (Golden)*.—First prize, Mr. E. Burton, Truro. Second prize, Mr. Cock, Truro. Class 30.—*CHICKENS OF 1853*.—Second prize, Mr. E. Burton, Truro.

Class 31.—*POLAND FOWL (Silver)*.—First prize, Mr. G. Williams, Trevince.

Class 33.—*POLAND FOWL*.—First prize, Mr. W. Lawrence, Gulval.

Class 35.—*FOR ANY OTHER DISTINCT BREED*.—Second prize, Mr. A. Smith, Scilly. Second prize, Mr. Jas. Groves, Truro. First prize, Mr. Thomas Dunstan, Truro. Second prize, Mr. G. Dixon, Truro. Second prize, Mr. H. Edwards, Penryn. Second prize, Mr. T. Gittus, Goldsithney. Second prize, Mr. W. Benney, Truro.

Class 36.—*BANTAMS*.—First prize, Mr. H. C. Carnell, Perran Warf. Second prize, Mr. G. Williams, Trevince.

Class 37.—*GEES*.—First prize, G. Williams, Esq., Trevince. Second prize, G. Williams, Esq., Trevince.

Class 39.—*DUCKS (White Aylesbury)*.—First prize, Mr. C. Hawke, Truro. Second prize, Mr. T. Gittus, Goldsithney.

Class 40.—*DUCKS (Rouen)*.—First prize, Mr. E. Burton, Truro.

Class 41.—*DUCKS*.—First prize, Mr. C. Green, Truro. Second prize, Mr. Hosking, Chasewater. Second prize, Mr. G. Williams, Trevince.

Class 42.—*TURKEYS*.—First prize, Mr. G. Williams, Trevince. Second prize, Dr. Carlyon, Truro. Second prize, Mr. Edmund Carlyon, St. Austell.

Class 44.—*GUINEA FOWL*.—First prize, Master Charles Gatley, Truro.

GREAT METROPOLITAN POULTRY SHOW.—No reason can be assigned why a Show of Poultry in London should not excel, or, at the least, equal, the similar display which is held annually at Birmingham. Yet such an equality has not hitherto been achieved, and we hear it asked on all sides, "Why is this?" We do not feel at all inclined to enter upon an explicit answer to this query, but there is some powerful reason existing that keeps away from the London Exhibition pens such birds as those of Captain Hornby, and Messrs. Sturgeon, Peters, Punchard, &c. To secure a better exhibition, there ought to be a powerful Committee of men above suspicion, and who do not flinch from having their names blazoned forth to the world—a Committee not exclusively of exhibitors, and of men more anxious to have an excellent Exhibition than to reap from it some advantage to themselves. If such a Committee, and under Royal Patronage, is formed, we shall have a Poultry Exhibition such as ought to be held in the British metropolis.

At the Show, which endured from the 10th to the 13th instant, both those days included, there were about 1130 pens of poultry, but very many were extra stock "for sale," and of the others there were far too many exhibited in the names of the same few parties, with no other object than to obtain purchasers. This sinks the character of an Exhibition, for it is bringing it down to the level of a Poultry Market.

The pens were very well arranged, and the ventilation,

feeding, and careful attendance on the birds, were unexceptionable.

Although there were more than sixty pens of *Spanish* fowls, yet none were equal in quality to those we have seen both here and at Birmingham. Had not the cock in Pen 6, to which a first prize was awarded, lost one eye?

There were about one hundred pens of *Coloured Dorkings*, and among them some birds of great excellence, especially the single cockerels exhibited by Mr. Fisher Hobbs. We never saw finer or better-conditioned birds. They are first cousins of the bird of which a portrait is given in "The Poultry Book." Mr. Hobbs sold three to Prince Albert for £25. *White Dorkings* were few in number, and this was not compensated by quality.

There were nearly 400 pens of *Shanghaes*, and many were very good. All, however, betray a great neglect of attention to improvement of form. Colour has, hitherto, absorbed too much of the breeder's care, but he must now pay the same attention to form, and the same judgment as is shown by flock and herd masters to couple parents together that may combine all desired points in their offspring. Moreover, we saw in many pens all the bad consequences of breeding-in-and-in. The *Black Shanghaes* were very indifferent, and we expect soon to see them entirely neglected. The *Brahma Pootras* were there in some force, and a very varied lot indeed they were. No better evidence of their want of legitimacy could be given than the fact that the first prize was given to birds with Pea-combs, and all the aspect of a Malay tinge; whilst the second prize was given to single-combed birds, of so marked a character, that if only their heads had been seen they would have been taken for Dorkings.

The *Malays* were good, and the cock in pen 615 was as noble a bird as we ever saw of this variety. The *Hamburghs* were, generally, above an average; and pen 780, belonging to the Rev. F. W. Freeman, which took the first prize for *Silver-pencilled*, were very superior. *Polands* were generally good, and we were much struck by the black with black top-knots, belonging to Mr. W. G. Vivian. *Bantams* were generally good also; and the *Gold-laced*, pen 973, shewn by Mr. U. Spurey, were the best of the variety we ever saw. Their delicacy of form, purity of colour, accurate lacing, and high condition, could hardly be excelled. They were purchased by the Queen for £10. The other classes were of average merit, and the *Muscovy Ducks* very superior. There were 425 pens of Pigeons, and about the best collection, as a whole, we ever witnessed.

The novelty of exhibiting single cocks and single hens, we think, was highly successful. They are not so pleasing to the eye as when grouped together; but standing alone affords a stringent test of excellence. None but first-rate birds can bear this solitary display. It enabled many to obtain new blood for their poultry-yards, of which they readily took advantage.

In the "Distinct Breed" class we noticed but one novelty, pen 937, "Ghou Rook Fowls." They are mere toy birds, small, quite black, crested like the Ptarmigan, very short-legged, and rumpless.

JUDGES.—Edward Hewitt, Esq., Eden Cottage, Spark Brook, Birmingham. William Symonds, Esq., 6, Belfield Terrace, Weymouth. Mr. John Baily, Mount-street, Grosvenor Square.

SPANISH.—Class 1.—Cock and two Hens.—6. First prize, Mr. Thomas H. Fox, 44, Skinner-street, Snow Hill. 8. Second prize, Mr. Charles Botham, Wexham Court, Slough. 13. Third prize, Mr. W. F. Fisher, Blandford. Class 2.—Cock and two Pullets.—29. First prize, Mr. Wm. Plummer, Brislington, near Bristol. 50. Second prize, Mr. Edward Owen, 121, High-street, Shadwell. 43. Third prize, Mr. John Taylor, jun., Cressy House, Shepherds Bush. Class 3.—Cock.—55. First prize, Mr. H. D. Davies, Spring Grove, Hounslow. 59.—Second prize, Mr. Joseph Rake, Bristol. Class 4.—Hen.—64. First prize, Mr. William Plummer, Brislington, near Bristol. 67. Second prize, Mr. C. J. Mold, Wingfield Park, Belper.

DORKING.—Class 5.—Cock and two Hens.—91. First prize, Rev. James Boys, Biddenden, Kent. 84. Second prize, Mrs. Finch Noyes, The Cottage, Salisbury. 75. Third prize, Mr. W. Smith, Mays Hill Farm, near Henley in Arden. Class 6.—Cock and two Pullets. 128. First prize, Mr. H. Smith, The Grove, near Bingham, Notts. 135. Second prize, Mr. Edward Terry, Aylesbury. 102. Third prize, Rev. James Boys, Biddenden, Kent. Class 7.—Cock.—145. First prize, Mr. W. Fisher Hobbs, Boxted Lodge, Colchester. 147. Second prize, Mr. W. Fisher Hobbs, Boxted Lodge, Colchester. Class 8.—Hen.—156. First prize, Rev. Jas. Boys, Biddenden, Kent. 159. Second prize, Mr. W. G. K. Breavington, Sutton, near Hounslow. Class 9.—White.—

Cock and two Hens.—173. First prize, Mr. F. Edwards, Bulstrode Park, Bucks. 160. Second prize, Mr. Jos. Jennens, Moseley, near Birmingham. Class 10.—Cock and two Pullets.—186. First prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. 182. Second prize, Mr. H. D. Davies, Spring Grove, Hounslow.

COCHIN-CHINA (Buff and Cinnamon).—Class 11.—Cock and two Hens.—198. First prize, Mr. John Fairlie, Cheveley Park, Newmarket. 199. Second prize, Mr. John Fairlie, Cheveley Park, Newmarket. 200. Third prize, Mr. R. L. Howe, Palgrave, Suffolk. Class 12.—Cock and two Pullets.—302. First prize, Mr. F. C. Stegall, Weymouth. 246. Second prize, Mr. John Fairlie, Cheveley Park, Newmarket. 243. Third prize, Mr. John Fairlie, Cheveley Park, Newmarket. Class 13.—Partridge-coloured.—Cock and two Hens.—345. First prize, Mr. Thos. Bridges, Croydon. 344. Second prize, Mr. John Fairlie, Cheveley Park, Newmarket. 352. Third prize, Mr. Jedediah Strutt, Belper. Class 14.—Cock and two Pullets.—356. First prize, Mr. John Fairlie, Cheveley Park, Newmarket. 361. Second prize, Mr. J. F. Chuter, Haverhill. 362. Third prize, Mr. J. F. Chuter, Haverhill. Class 15.—Cock and one Pullet.—414. First prize, Mr. H. Gilbert, Upper Phillimore Place, Kensington. 456. Second prize, Mr. J. H. Gandy, Old Cleeve, Taunton. Class 16.—White.—Cock and two Hens.—464. First prize, Mrs. E. Herbert, Powick, Worcester. 461. Second prize, Mr. W. C. Reynolds, Great Yarmouth. 462. Third prize, Mr. J. Rake, Bristol. Class 17.—Cock and two Pullets.—486. First prize, Mr. John Eason, Montpelier House, South Lambeth. 487. Second prize, Mrs. E. Herbert, Powick, Worcester. 465. Third prize, Rev. S. Allen, D.D., Englefield Green, Surrey. Class 18.—Black.—Cock and two Hens.—494. Second prize, Mr. T. H. Fox, 44, Skinner-street, Snow Hill. (First prize withheld.) Class 19.—Black.—Cock and two Pullets.—508. First prize, Mr. V. W. Blake, 6, Old Square, Birmingham. 507. Second prize, Mr. J. Harding, Brazendoots Road, Norwich. Class 20.—Cock.—515. First prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. 527. Second prize, Mr. R. E. Gibbs, jun., 91, Old Gravel Lane. Class 21.—Hen.—542. First prize, Mr. John Fairlie, Cheveley Park, Newmarket. 550. Second prize, Mr. John Emery, Kempston, Hardwick, near Bedford. (The class meritorious.)

BRAHMA POOTRA.—Class 22.—Cock and two Hens. 603. First prize, Mr. H. D. Davies, Spring Grove, Hounslow. 593. Second prize, Mr. H. Gilbert, Upper Phillimore Place, Kensington.

MALAY.—Class 23.—Cock and two Hens.—615. First prize, Mr. William Crick, 23, Warner Place, South Hackney Road. 612. Second prize, Mr. Robert Hedges, 1, St. George's Road, Horsemenager Lane. Class 24.—Cock and two Pullets.—625. First prize, Mr. James Leighton, 183, High-street, Cheltenham. 626. Second prize, Mr. Edward Owen, High-street, Shadwell. (Whole class meritorious.)

GAME FOWL (White and Piles).—Class 25.—Cock and two Hens.—633. First prize, Rev. T. L. Fellowes, Beighton. 630. Second prize, Mr. James Monsey, Norwich. Class 26.—Cock and two Pullets.—636. First prize, Mr. George Hatfield, Doncaster. 638. Second prize, Mr. James Monsey, Norwich. Class 27.—Reds.—Cock and two Hens.—639. First prize, Mr. Henry Thurnall, Royston. 647. Second prize, Mr. E. Farmer, Greet, Birmingham. 644. Highly commended.—Mr. W. Chard, jun., 3, Clifford's Inn, Fleet-street. (This class generally commended.) Class 28.—Cock and two Pullets.—662. First prize, Mr. E. Lowe, Comberford Mills, near Tamworth. 653. Second prize, Mr. G. C. Adkins, Edgbaston, Birmingham. Class 29.—Blacks, &c.—Cock and two Hens.—678. First prize, Mr. Joseph Jennens, Moseley, Birmingham. (Second prize withheld.) Class 30.—Cock and two Pullets.—684. First prize, Mr. R. Choyce, Bramcote Hall, Tamworth. 667. Second prize, Mr. W. G. Vivian, Singleton, Swansea. Class 31.—Greys.—Cock and two Hens.—689. First prize, Mr. H. Thurnall, Royston. 694. Second prize, Mr. H. T. Freere, Palgrave, Suffolk. Class 32.—Cock and two Pullets.—706. First prize, Mr. T. B. Fairhead, Maldon, Essex. 701. Second prize, Mr. James Monsey, Norwich.

GOLDEN-PENCILLED HAMBURGH.—Class 33.—Cock and two Hens.—709. First prize, Rev. F. W. Freeman, Little Finborough, Stowmarket. 708. Second prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. Class 34.—Cock and two Pullets.—719. First prize, Rev. T. W. Freeman, Little Finborough, Stowmarket. 729. Second prize, Mrs. Mills, Bisterne, Ringwood. (Whole class highly meritorious.) Class 35.—Golden-spangled Hamburg.—Cock and two Hens.—742. First prize, Mr. C. J. Mold, Wingfield Park. 734. Second prize, Mr. G. C. Adkins, Birmingham. Class 36.—Cock and two Pullets.—744. First prize, Mrs. H. Fookes, Whitechurch, Blandford. 748. Second prize, Mr. J. Dixon, Bradford. Class 37.—Silver-pencilled Hamburg.—Cock and two Hens.—761. Second prize, Mr. T. McCann, Malvera. (First prize withheld.) Class 38.—Cock and two Pullets.—780. First prize, Rev. F. W. Freeman, Little Finborough, Stowmarket. 770. Second prize, Mr. F. H. Aberdein, Honiton, Devon. Class 39.—Silver-spangled Hamburg.—Cock and two Hens.—794. First prize, Mr. F. Edwards, Bulstrode Park. 797. Second prize, Mr. J. Jordan, Wheeler-street, Birmingham. Class 40.—Cock and two Pullets.—816. First prize, Rev. T. L. Fellowes, Beighton. 806. Second prize, Mr. Jas. Dixon, Bradford.

POLAND FOWL (Black, White-crested).—Class 41.—Cock and two Hens.—819. First prize, Mr. G. C. Adkins, Birmingham. Class 42.—Cock and two Pullets.—828. First prize, Mr. F. Edwards, Bulstrode Park. 824. Second prize, Mrs. Mills, Bisterne, Ringwood. Class 43.—Golden.—Cock and two Hens.—840. First prize, Mr. R. H. Bush, Stifford House, Clifton. 835. Second prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. Class 44.—Cock and two Pullets.—854. First prize, Mr. W. G. Vivian, Swansea. 848. Second prize, Mr. A. Rosling, jun., Southwark. Class 45.—Silver.—Cock and two Hens.—858. First prize, Mr. G. C. Adkins, Birmingham. 861. Second prize, Mr. S. T. Baker, Manor House, Chelsea. Class 46.—Cock and two Pullets.—874. First prize, Mr. F. Edwards, Bulstrode Park. 878. Second prize, Mr. S. Boulnois, Abbey Road, St. John's Wood. Class 47.—Any other colour.—Cock and two Hens.—884. First prize, Mr. T. Dutton, Streatham Common, Surrey. 883. Second prize, Mr. John Fairlie, Cheveley Park. Class 48.—Cock and two Pullets.—897. First prize, Mr. W. G. Vivian, Swansea. 896. Second prize, Mr. W. G. Vivian, Swansea.

FOR ANY OTHER DISTINCT BREED.—Class 49.—907. First prize, Mr. John Taylor, jun., Cressy House. (Andalusian.) 918. Second prize, Mr. John Fairlie, Cheveley Park. (Scotch Banties.) 924. First prize, Mr. H. A. Davies, Spring Grove, Hounslow. (Rangoon.) 929. Second prize, Mr. W. G. Vivian, Swansea. (Frizzled.) 932. Second prize, Mr. W. G. Vivian, Swansea. (Normandy.) 937. First prize, Mr. H. B. Higgins, Hill Lodge, Southampton. (Ghou Rook.) 939. Second prize, Mr. J. C. Mold, Wingfield Park, Belper. (Rumpless.) 940. First prize, Rev. T. L. Fellows, Beighton. (Moss Pheasant.)

FOR CROSS BREED.—Class 50.—949. Ten shilling prize, Mr. Thomas Sheen, Aylesbury. (Muffled Dorking and Cochins.)

BANTAMS (Gold-laced).—Class 51.—Cock and two Hens.—973. First prize, Mr. U. Spurey, Market-street, Dunstable. 970. Second prize, Mr. G. C. Adkins, Birmingham. Class 52.—Silver-laced—Cock and two Hens.—989. First prize, Mr. Urial Spurey, Market-street, Dunstable. 988. Second prize, Mr. James Monsey, Norwich. Class 53.—White.—Cock and two Hens.—1000. First prize, Mr. W. Cottis, Witham, Essex. 999. Second prize, Mrs. Caroline Brace, Abingdon. Class 54.—Black.—Cock and two Hens.—1007. First prize, Mr. James Monsey, Norwich. 1013. Second prize, F. S. Astley, Esq., Burgh Hall, Thetford. Class 55.—Any other variety.—Cock and two Hens.—1025. First prize, Mr. W. Sidney Forrest, Greenhithe. 1029. Second prize, Mr. W. G. Vivian, Singleton, Swansea.

GESE.—Class 56.—Gander and two Geese.—1050. First prize, Mr. A. Williams, Reading. 1051. Second prize, Mr. A. Williams, Reading.

DUCKS (White Aylesbury).—Class 57.—Drake and two Ducks.—1056. First prize, Mr. E. Terry, Aylesbury. 1058. First prize, Mr. W. G. K. Bravington, Sutton, near Hounslow. 1077. Second prize, Mr. A. Williams, Reading. Class 58.—(Rouen).—Drake and two Ducks.—1088. First prize, Mr. R. Green, Westerham. 1093. Second prize, Mr. B. H. Brooksbank, Titchill, Rotherham. Class 59.—Any other variety.—1098. First prize, Mr. John Fairlie, Cheveley Park. 1105. Second prize, Mr. G. Botham, Wexham Court, Slough. Class 60.—(Muscovy).—Drake and two Ducks.—1118. First prize, Mr. John Fairlie, Cheveley Park. 1120. Second prize, Mr. I. Taylor, Cressy House.

TURKEYS.—Class 61.—Cock and two Hens.—1123. First prize, Mr. John Fairlie, Cheveley Park. 1124. Second prize, Mr. John Fairlie, Cheveley Park. 1130. Third prize, Mr. A. Williams, Reading.

GUINEA FOWL.—Class 62.—Pair.—1137. First prize, Mr. F. Edwards, Bulstrode Park.

ORCHARDS IN KENT.—No. 3.

BLACK CURRANTS.

AMONGST the individual fruits to which the public taste of late years has directed more than ordinary attention the Black Currant stands pre-eminent. Useful alike at the time it is in season, and in a preserved condition, the demand for it has been such as to induce growers to extend their plantations considerably, and as it is well known to be hardy, of easy culture, and speedily comes into a bearing condition, it is probable the supply hereafter may fully equal the demand, but as that business more especially concerns the speculator than the cultivator, I will at once leave the caterer for the public to his own conjectures as to their future wants, and proceed to detail the process by which the fruit is grown so extensively as astonishes some provincial gardeners when they first get a sight of the supplies which our metropolitan markets present during the season.

Commencing, first, with the situation, it is necessary to observe that this fruit is but seldom allowed to reign paramount master of the premises it occupies, for it generally is planted underneath some other crop to which it is subordinate, as Apples, Pears, or Filberts, but more generally the two first-named, for the latter prefers a drier soil than suits the Black Currant in a usual way; however, where the wants or wishes of the owner influences his decision, he plants it with the last-named crop as well, otherwise it must be observed that the Black Currant prefers a damp soil, and seems to derive really less injury from shelter than any other fruit we know of. In forming a new plantation of permanent standard fruit-trees, it is usual to plant something as nurses to them, or rather to occupy the ground in a profitable way while the larger trees are progressing, and, not unusually, these temporary trees remain long after the branches of the trees above them have united so as to deprive the undergrowth of all chance of seeing the sun, and yet we frequently see good, useful fruit gathered in such places, though certainly not in the abundance it would have been had it been allowed the unopposed possession of the whole ground, but even under such disadvantages its importance often tells to the grower's benefit as much as its exalted superiors.

When carefully pruned and attended to it bears well in seasons when other fruits are often scanty, and it is seldom that a total failure in this crop takes place, unless under extraordinary circumstances. Certainly, the past season exhibited the Black Currant in a different light than it usually had been seen in before, for at the time when the fruit had been fairly set, and partly grown, a disease, under the incomprehensible title of "a blight," attacked them, and quantities of the berries fell off, leaving the bunches much lessened, in many cases more than half; this disease having much of the mystery of the Potato disease about it, conjectures as to its cause were rife enough, but attempts at its cure or prevention another season were but little attended to. Now, as this disease may make its appearance again, it is only right here to mention it as presenting no features to indicate want of health or vigour in the plant; neither is it confined to those who may be suffering from poverty or weakness, for the healthiest plantations were attacked as well as the neglected or indifferent ones. However, the disease did no farther damage than lessening the crop, for the remaining portion ripened very well, and at gathering time the quantity was not so much below the average as was expected, yet it could not be called more than half a crop.

As I have said, the Black Currant forms a very important undergrowth to plantations of Apples, Plums, &c., its produce is not always the only source of revenue the cultivator relies on, for the other fruits may be abundant, although the present season this was far from being the case; however, there is every reason for believing that the short crop of the past year will in no wise prevent fresh plantations being made, and, like everything else (which there is a remunerative demand for), ground not exactly adapted for Black Currants is likely to be planted with them, and, in fact, has been planted already, but so hardy and accommodating is this production, that it does not seem to refuse to grow anywhere; even in places where nothing else will thrive, it will accommodate itself wonderfully well—on the cliffs of a rock, or the recesses of a dell—on light soil, or on heavy; yet it is only on the latter kind of soil that the quantity and quality of the fruit is according to the standard of excellence we would like to see adopted; only in one respect this fruit differs from most others, for while they are injured by being grown in close contact with trees of another kind, struggling with, and depriving them of much of the nourishment they so much require, this fruit seems to thrive better under the shade of trees than it does alone, provided these trees be not too numerous or encroaching. However, as we have said enough on its general habits, let us turn to the details of its cultivation, which are few and easily understood.

In the first place, it is understood by all not confined all their lives in the recesses of city or factory, that the Black Currant strikes root freely when slips of the current year are put into the ground in the autumn, after they have ripened and shed their leaves; these slips are usually planted in rows about two feet apart, and six or eight inches are allowed in the row; the shoots made the first season are usually cut back the ensuing winter, which cutting back is called heading-in; the growth of the second season is generally sufficient to form a tolerable "head," and the plant might then with advantage be taken up and planted in its place, as it is advisable it should not be too stunted. At this planting no cutting takes place, except any very disorderly shoot may be cut out, but none are shortened; neither is it common to shorten any shoot of the Black Currant at any time, for the wood-buds being generally sparingly scattered, it is better to leave the end one, which is always present. In planting, the Black Currant is usually inserted deeper in the ground than other fruits of its size, and as it is usually furnished with abundance of roots of a fibrous kind its removal is not much check to it. The growth of the first season after planting is looked over and thinned a little, cutting away all horizontal or dependant shoots, as these, when loaded with fruit, hang on the ground and get dirtied. Some care must also be taken that the plant does not hang on one side; this must be remedied by stamping it up with the foot, or when the plant gets large it is cut away on the heavy side, preserving the other to assist in maintaining something like a balance.

Dung, or other manure, must be added in winter, and great care taken not to dig too deep. This practice is really more hurtful to fruit plantations than the digging will compensate for. Even the Black Currant, which is, as we say, planted deep, requires to be carefully dealt with at digging-time, for many useful roots will be found within four inches of the surface, and it is needless here observing that these ought not to be disturbed. It is not uncommon for some growers to heap the earth up in a mound around the collar of each plant, which materially steadies it against the wind and other casualties; and when the ground is light it may be of service, but in a general way it may be dispensed with, and the ground cultivated plain, observing that in all winter prunings to preserve a few young shoots from the centre of the plant, so as to keep up the succession, and not allow it to become too tall, and "run away," as it is called; otherwise, with the exception of these shoots coming forward, the tree ought not, by any means, to be too thick, so that when it has got to what may be called "full size," a considerable quantity of shoots may be cut away every year; cutting away, first, all those which disfigure the tree by their improper length or awkward growth; afterwards, if it be necessary, a few that may be wanted to relieve the tree of its superfluity. However, as all depends on the eye and taste of the operator, it is needless saying more than again pointing out that the summer shoots of the past year ought never to be shortened, but that in all other respects he may cut the tree in any manner with impunity, for it will endure a great deal of ill-usage before it finally gives in. But as a nice plantation of healthy young trees, vigorous, well-shaped, and uniform, is always a pleasing object, I advise the youthful cultivator not to rest satisfied with anything short of excellence in this respect; and though the Black Currant is often thrust into any out-of-the-way corner, yet it is only when they are well grown and orderly-looking trees that they approach the point which it is desirable to attain in an amateur garden; for even in this utilitarian age, the appearance of a tree is not altogether unimportant, especially when planted in a position where it is seen daily, or nearly so. All these points must, therefore, be attended to, and the Black Currant, when grown as it ought to be, will form as useful a fruit as any which grace our tables.

In conclusion, I may observe, that the old variety is still mostly grown; for though the larger one, called the *Black Naples*, has been tried by some of the more spirited growers, it has not become so much a favourite as it was expected to be, for it appears the ripened berries drop off even more than the old kind with the least wind or rain. If this drawback could be overcome by some improved variety of equal size, a desideratum would be attained useful to all, and we have no doubt but attention skilfully directed that way would accomplish this; the same as many other wayward propensities in fruits and vegetables have been overcome. But while the energies of our fruit-growers are all directed to the improved culture or perfection of some more fashionable fruits, this may be neglected; yet there is none more worthy the attention of the enterprising improver, and we have no doubt but a really better variety than those now in existence would meet the reward due to it, as much as if it were a like improvement on Black Hambro' Grapes, or the latest fashionable Strawberry.—H. B.

SHANGHAE FOWLS.

In your last number's notices to correspondents, I perceived you say, that you are "at a loss to see what improvement is conferred by the Falcon Hock" (in reference, I presume, to Shanghae fowls).

As "a curve is a line of beauty," an artist would, probably, on seeing specimens, one possessing, and the other wanting, this property, decide that the soft, curved feathers curling round and concealing the angularity of the hock was an evident improvement. Whether this is a sufficient reason for the "fashion" setting so distinctly in this direction, is not for me to say; nor is "fashion" much governed by reason; but it is well known to such of your readers as have opportunities of attending poultry sales, that the public taste is so decided in this point, that birds

possessing it have realised considerable sums, which, otherwise, were so inferior, that they would infallibly have been consigned to your "class for dead poultry;" and I have no doubt that in another season it will be considered essential for prize birds to possess this property. In another page, you also express a hope that you may not again hear of such large sums, as have, in a few instances, been given for fowls. I should imagine, that so long as it is difficult to produce them combining ALL the required points of excellence, such as do come up to that standard will command as high prices, relatively to their intrinsic value, as choice specimens of any other description of stock (useful or ornamental) are known to do; and the withholding the first prize for Buff Shanghaes, at the late Birmingham Show, affords pretty good evidence, that in that variety first class birds are not yet very numerous, and that the owners of such are not likely to be tempted to part with them at an ordinary price.—H. W. COLLINSON, 47, Castle-street, Southwark.

[The gentleman who wrote the comment upon the Falcon hock is a good judge, but probably meant no more, than that such circumstances are of minor consideration. However, it is a matter of taste only. With regard to our hope that we shall hear no more of enormously large sums being given for a single bird, we only intended to convey the expression of our sincere wish that good birds may so abound as to preclude such high prices being obtainable. In other words, that the supply of excellence will more than equal the demand.—ED. C. G.]

SEA WEEDS.

(Continued from page 288.)

SOME of my readers may not have seen an account of the gathering of Sea Weeds for manure, coal, and fire-wood, in a History of the Channel Islands, by Inglis; and to them it can scarcely fail to be interesting, as it is peculiar to those islands.

"This Sea Weed is called in French *varech*, and in Jersey dialect 'vraic;' and a busy time is the vraicking season in Jersey. This season is fixed by the island legislature, and is named twice a year, commencing generally about the 10th of March and the 20th of July, and continuing each time about ten days. I have spoken of the beds of rocks that surround the island; and it is chiefly from these rocks and islets that the vraic is gathered.

"When the vraicking season begins, those whose families are not numerous enough to collect the needful supply assist each other; and the vraicking parties, consisting of eight, ten, or twelve persons, sally forth betimes, from all parts of the island, to their necessary, laborious, but apparently cheerful work. Although a time of labour, it is also a season of merriment; 'vraicking cakes,' made of flour, milk, and sugar, are plentifully partaken of, and on the cart which accompanies the party to the sea-beach is generally slung a little cask of something to drink, and a suitable supply of eatables. Every individual is provided with a small scythe, to cut the weed from the rocks, and with strong leg and foot gear. The carts proceed as far as the tide will allow them, and boats, containing four or six persons, carry the vraickers to those more distant rocks which are unapproachable in any other way. It is truly a busy and a curious scene. During this season, at half-tide or low-water, multitudes of carts and horses, boats and vraickers, cover the beach, the rocks, and the water; and so anxious are the people to make the most of their limited time, that I have often seen horses swimming, and carts floating, so unwilling are the vraickers to be driven from their spoil by the inexorable tide. But this Sea Weed is not employed solely as manure, it is also used as fuel, and for this purpose it is collected at other times than at the regular vraicking seasons—not from the rocks, indeed, but from the sea-beach. The collection of this Sea Weed is a constant employment with those who live near the sea shore, and the produce of their labour is either used for fuel, or is sold to those who want it. At almost all times, men, women, and children, but chiefly the two latter, are to be seen at this employment, gathering or

spreading the weed out to dry. They use a rake, or three-pronged pitchfork, and a wheelbarrow, in which it is carried above high-water mark to be dried. This is the universal fuel of the country; and it makes a hot, if not a cheerful fire. Coal is scarcely used at all, and only a very small quantity of wood along with the *vraic*, and this even not universally. On feast days, only, and family gatherings, a coal fire is lighted in the best parlour."

ORDER 9.—CORALLINACEÆ.

"Rigid, articulated, or crustaceous, mostly calcareous Sea Weeds, purple when recent, fading on exposure to milk-white, composed of closely-packed elongated cells or filaments, in which carbonate of lime is deposited in an organised form."—*Harvey*.

Formerly these algæ were thought to be zoophytes, but there is now no doubt that they are vegetables. This may be ascertained in a powerful acid, when the lime will be removed, and the vegetable substance be disclosed.

1. *CORALLINA OFFICINALIS* (Commercial).—Very common on all our shores, from two to six inches high, fringing the edges of tide pools, where it affords a snug lurking-place for young crabs, &c.

2. *C. ELONGATA* (Lengthened).—"The lateral shoots of the branches slender and subulate, with long cylindrical articulations."—*Johnst.*

3. *C. SQUAMATA* (Scaly).—On rocks in the south of England.

2. JANIA.

"Frond slender, branched in a dichotomous manner, the joints cylindrical, the crust calcareous unporous, the axis subcartilaginous, solid, constructed at intervals corresponding to the articulations of the crust. Capsular swellings produced in the axis of the branches containing granules. Name from Janira, one of the Nereides."—*Johnston*.

1. *JANIA RUBENS* (Ruddy).—Parasitical on small marine plants; common, very bushy indeed, and tufted. Some specimens which I have from Jaffa are so thickly clustered that they look like a little dog's paw.

2. *J. CORNICULATA* (Small-horned).—Like *J. rubens*, forming thick tufts, but the articulations of the branches are different. Sub-order, 2. Nulliporeæ. Frond crustaceous, or foliaceous, opaque, not articulated.

3. MELOBESIA.

"Name from one of the sea nymphs of Hesiod."

1. *M. POLYMORPHA* (Various-formed).—"Frond attached to rocks, thick, stony, encrusting, or rising into short clumsy branches."—*Harvey*.

2. *M. CALCAREA* (Chalky).—"On many parts of the coast this plant forms vast beds, extending for miles in submarine strata, and is advantageously used as manure on soils requiring the addition of lime."—*Harvey*.

3. *M. FASCIOLATA* (Brindled).—"At the bottom of the sea."

4. *M. AGARICIFORMIS* (Mushroom-shaped).—"Frond unattached, globular, hollow. On the bottom of quiet bays."—*Harvey*.

5. *M. LICHENOIDES* (Lichen-like).—Of a pale colour, and, as its name denotes, resembling a Lichen. There are several minute species, of which I shall only give the names.

M. MEMBRANACEA (Skinny).

M. FARINOSA (Floury).

M. VERRUCATA (Warted).

M. PUSTULATA (Pimpled).

Professor Harvey says that the question still remains, whether Melobesiæ are independent vegetables, or whether they be merely amorphous states of the common *Corallina officinalis*. This latter is the view advocated by Dr. Johnston.

4. HILDENBRANDTIA.

1. *HILDENBRANDTIA RUBRA* (Red).—"On smooth stones and pebbles between tide marks, and in deep water. Colour variable—now a bright, now a dull red."—*Harvey*.

"The corallines are found in all parts of the ocean, but are much more numerous in warm than in cold countries, and some of the species of the tropical and sub-tropical ocean are among the most beautiful of marine vegetables."—*Harvey*.

S. B.

(To be continued.)

RAIN THAT FELL AT MIDDLETON, NEAR BEVERLEY, IN THE YEAR 1853.

	<i>Inches.</i>
January	2.50
February	1.82
March	1.75
April	1.18
May	1.47
June	2.89
July	3.02
August	1.82
September	1.53
October	3.26
November	2.04
December	1.14

Inches 24.42

1850 24.92

1851 23.67

1852 31.76

—ROD. DENISON, *Waplington Manor, Pocklington, Yorkshire.*

DISEASES OF POULTRY.

BUMBLE FEET IN DORKINGS.

HAVING had recently occasion to kill some Dorkings affected with this disease, I took the opportunity of submitting the feet to careful microscopical examination (with the aid of a gentleman well known for his researches in minute pathological anatomy). As the result of our examination of the disease, in various stages, I may state, that it appears to take its rise in the true skin (viz., the cutis), which is exceedingly thick under the sole of the foot; the first symptom of its occurrence is the presence of a small warty tumour, which appears externally; this gradually extends, and a deep-seated enlargement appears; at the same time, the latter continues to increase, and when it attains a considerable size ulceration takes place, and the scurf skin (or cuticle) covering it is loosened; at the same time a peculiar and offensive odour results from the ulceration of the tumour. It is hardly necessary to remark that the bird becomes lame, and, if one side is affected, rests the foot as much as possible.

On examining the substance of the tumour under the microscope, it was found to be totally destitute of blood-vessels and nerves, and to be, in fact, a mass of dead inorganicized matter, situated between the true skin and the tendinous parts of the foot.

The remedy that would naturally suggest itself for this examination would be the removal of the diseased growth; but I have found, on attempting this operation subsequently, that there are two serious objections to this practice—cutting into the skin around the diseased growth is attended with great loss of blood, the flow of which is checked with difficulty; and the removal of the tumour cannot be effected without exposing to so great a degree the tendinous structures of the foot, that a recovery can scarcely be expected, especially as there is a low stage of vitality in these parts very unfavourable to recovery after injury.

This examination confirms my previous views of the cause of this troublesome complaint, namely, that it is produced by pressure and concussion. Cocks, therefore, are more subject to it than hens from their greater weight; and birds that roost on high, narrow perches, are much more liable to the disease than those than are obliged to rest on broad and low ones.

Another evil arising from high perches for heavy birds is, that they frequently break the keel of the breast bone by the violence with which they descend on to the ground. I killed a Dorking hen, a short time since, in which the breast bone was extensively fractured in this way; and another was under my care, in which I had to remove a large portion of dead bone that had been destroyed in this manner; and I think it very probable that the violence of the shock may severely injure some of the more important internal organs, especially during such time as the hens are laying.

In conclusion, I can, from practice as well as theory, re-

commend low, broad perches as the best preventive of this affection. It is a fortunate circumstance that its frequent occurrence is so easily prevented, when its incurable nature is taken into consideration. In fact, so slightly do I think it is under the influence of remedies, that I would not give five shillings for the best Dorking that ever walked on two feet if one of them was thus affected.—W. B. TEGETMEIER. *Willesden, near London.*

BEE-KEEPING FOR COTTAGERS.

(Continued from page 272.)

Coverings and Shades.—For coverings, nothing better than common glazed milk-pans, or lids of large brown pans: the latter are to be preferred, as having a handle, being glazed on the outside, and throwing off the rain more easily. They make a neat finish to the hives; by their weight they keep the hives steady; and the cost of them, in most localities, is very trifling. They should be sufficiently large to throw the wet well over the floor-board. Where slate or freestone abound, a substitute for them might be made, by procuring a lump of the required size, flat on one side, chipping away the upper surface to give it the form of a sugar-loaf, and just sufficient of the under surface to make it slightly hollow, and so prevent the wet from creeping up towards the hives: this, if of stone, would require painting. Whatever way be used for coverings, it is necessary that the bodies of the hives should also be protected, for on this (as already stated in section 1.) success, in a great measure, depends; for where the hives are exposed to the sun, the bees, by its heat, are inconvenienced in the summer, and rendered unnecessarily active, and consequently hungry in the winter, so that loss occurs all the year round. The protection cannot, perhaps, be better afforded, than by using a thick straw hackle placed over the milk-pan, worked on a hoop of such a size as to fit upon its (the milk-pan's) edge. By leaving the straw of this hackle long enough to reach nearly to the floor-board an effectual shade is made. We have used, with success, a kind of round jacket made of zinc, standing upon the floor-board, and covered by the milk-pans. A few holes at the top edge of the jacket let out all the hot air, the place of which is supplied from the entrance to it, which is made about eight inches broad, and six high, and is covered by a projecting piece which keeps the alighting board, by the hive entrance, quite dry. This jacket may be made of oil-cloth, stiffened by ribs of wood. Where milk-pans cannot be procured, hackles, such as those described, if properly secured against the wind, are the best substitutes.

Adapting Boards.—Several of these will be required; one, at the least, for each hive, and each top hive: they may be made of pieces of $\frac{1}{2}$ -inch mahogany, or pine, some of the same diameter as the stock, others of the same diameter as the top hives, each having a four-inch circular hole in the centre.

Water Pans.—Where brooks or ponds are not plentiful, water must be given to the bees in the summer months. It may be given in any brown shallow pan or trough, filled with good sized pebbles and moss, which will act as standing places for the bees. The water must be changed every day or two. Care must be taken not to cover over the tops of the pebbles, or they will be useless to the bees. Instead of using stones and moss, a kind of raft may be made by tying or nailing strips of light wood each about one inch broad, and an inch shorter than the breadth of the pan, at inch distances along two other pieces of wood, each about an inch shorter than the length of the pan: this raft should be well painted, or the wood will become saturated and sink: an adaptation of this raft may be used as a float for the feeder to be next described.

Weighing Machine.—We fear that it will be out of the power of many of our readers to get this: if so, they must rely upon their hands and judgment in ascertaining the weights of their several hives, taking care to under-estimate rather than over-estimate; after a little practice, very considerable accuracy of judgment may be acquired: experiments in weighing might be made at first with hives filled and partially filled with sand, which might be afterwards weighed in the ordinary domestic scales.

If a spring-balance of any kind can be bought, or even borrowed, then a tall tripod, with stout poles, about seven feet long for legs (like a gigantic milking-stool in form,) may be made, broad enough at the base to allow of its being placed over the hives, and having a piece of tough wood, about six inches square, nailed at the bottom of each leg, to prevent them sinking into the ground. Under the top piece (which corresponds with the seat of the milking-stool, and should be about nine inches square, and three or four inches thick) should be hung a pulley, or, even better, a set of pulleys, and to this pulley, or to the lower of the set of pulleys, should be hung the spring-balance. Four eyes must be screwed into the edge of each floor-board, at equal distance from each other, and two pieces of stout cord, each from four to five feet in length, with a hook firmly fastened to each end of each piece must be provided, and each of these pieces must be run through the ring in the moveable part of the balance. The method of using this apparatus is pretty obvious, will be detailed in section 4. We are indebted to the "Country Curate," for this idea of a tripod; though his is much more neatly and tastily made than that here described, which, however, it is believed, will be found equally useful with his.

Feeders.—As all food must be given at the top of the hive, and in large quantities when given in the autumn, large feeders are necessary. The simplest way to make them is to take a piece of wood, about eight inches square, and half-an-inch thick, and a strip of tin or zinc, equal in length to the four sides of the wood, and about four inches deep; then get one of the round German lucifer match-boxes, cut off the bottom of it, and make a hole about three inches from the edge of the eight-inch square piece of wood, just large enough to fit the part on which the lid of the lucifer-box would shut; fit this firmly into the hole, and you have a tube, up which, when placed over the centre hole of the hive, the bees can ascend. Nail a strip of zinc all round the piece of wood, take it to the tinman, and get him to solder up the fourth side. You will then have a box with a pipe standing up in it, three inches from one side, five inches from the other, counting from the centre of the pipe. Two inches from the side on which you have the five-inch space, have fixed another bit of tin or zinc running all across the box, and to within an eighth-of-an-inch of its bottom; next procure a piece of thin cork as large as the division of the box in which is the pipe; if a piece so large is not to be procured, stitch several smaller pieces together, cut a hole in the centre of it just large enough to fall easily over the pipe, bore it full of small holes with an awl, and burn these holes clean with a red hot iron wire, and you will have a float; paint the box and the float well inside and out, taking care not to stop up the holes in the float; get a piece of thin glass rather larger than the box, and you will have a feeder as complete and handy as any that can be made, and capable of holding four or five pounds of food. To use it, place it over the centre hole in the hive, with the narrow division towards the back of the hive, slip the piece of glass forward, and pour in the food, it will pass under the division, and raise the float.

(To be continued.)

TO CORRESPONDENTS.

. We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

COCHIN-CHINA FOWLS (R. P., Elmstead).—See what is said to-day about their merits editorially. Some of the sisters of the Dorking-breasted cock there mentioned, and some of the produce of the imported hen, will be sold at Mr. Stevens's Auction Rooms on the 24th instant.

W. ADAMS.—The Authoress of "My Flowers" offers her grateful thanks, and those of the recipients of the Christmas donation, to "C." She has presumed to use her own judgment in one case, and trusts for forgiveness. The "Widow Indeed" is so liberally provided for, that the half-crown meant for her was added to that of the "Poor Widow," whose eyes rained tears of gratitude for the blessing, for the season was very cold and trying. May an hundredfold be returned into that bosom which so kindly remembers the poor.

GUANO (Homo).—R. Errington begs to inform this inquirer, that the party he alluded to uses about two hundredweight to the statute acre of

guano. He applies it broadcast over the butts, or bouts, as they are called in Cheshire, just before they are soiled over, and the sprouts just breaking ground. The soiling is then immediately applied about four inches in thickness. *Homo* would do well to use two-and-a-half hundredweight, in his case, of real Peruvian, digging his ground well in the end of March, when dry, and setting well-kept seed, *already begun to sprout by design*, immediately on the heels of the digging.

FRUITS FOR YORKSHIRE (B. L., Hull).—Pears—Shobden Court, Gratioli of Jersey, Broom Park, Haddon's Incomparable, Thompson's, Forelle. Dessert Apples—Kerry Pippin, Court of Wick, Golden Reinette, Nonpareil Pitmaston Russet, Wyken Pippin, Boston Russet, Old Nonpareil. Kitchen Apples—Wormsley Pippin, Beauty of Kent, Winter Majetin, Gooseberry Apple, Alfreton, Calville Blanche. This selection is an admirable one, and just such as we would have recommended to you. Of PEARS for the east wall, you should have *Jersey Gratioli*, *Haddon's Incomparable*, and *Forelle*. Of APPLES, *Golden Reinette*, *Pitmaston Nonpareil*, *Russet*, and *Old Nonpareil*. All the dessert Apples in your list may be grown on Paradise stocks with success; but the culinary varieties should be on the Crab. The whole of the Pears will do on the Quince; but unless your soil is heavy and wet, we would not advise you to adopt it as a stock.—H.

RICHMOND VILLA BLACK HAMBO' GRAPE (A. B.).—We know this Grape, and, from what we have seen of it, it appeared to us to be very like a variety which we have known for the last six or seven years by the name of *Black Champion*. We are not prepared to say that it is the same, but if it is so similar as it appeared to us to be, it is a very first-rate Grape, and well worth cultivating even in the smallest collections. It is very superior, both in the size of the berry and bunch, to *Black Hambro'*, is nearly a fortnight earlier, produces berries of a more uniform size, and colours better. Such is our opinion of *Black Champion*, and such, also, was the opinion we formed of the *Richmond Villa* when we saw it. But we are always delicate about giving decided opinions on new things until we have had sufficient experience of them. We must, therefore, leave you to act in some measure on your own responsibility.—H.

FLOWER-GARDEN PLAN, No. 11 (A Yorkshireman).—That plan would do for even a smaller place than yours. The circles can be about five feet in diameter, and you ought to allow three feet between the beds; but the right way to go to work would be to get out the garden line, and a good bundle of little sticks, and with them to try to make the actual figures from the plan; then, if you found the place too small, allow less distance between the beds rather than curtail them.

ROSES (Rev. P.).—We have often said that all the strong hybrid China Roses, like *Blairii*, No. 2, will not, or rather will never, flower well, if at all, provided they are pruned like Moss and Cabbage Roses. Printed lists of these, and all other Roses, are offered for the mere charge of postage by all the great rose-growers, therefore it would be only waste of paper for us to print such lists.

GOOSEBERRIES (Ibid.).—The following are among the best table Gooseberries; the first three are small, and the other three large kinds:—Rough Red, Red Champagne, and Pitmaston Green Gage; Roaring Lion, Red Warrington, and Rifleman. For baking—Dixon's Golden Yellow, Wellington's Glory, British Crown, Keen's Seedling, Heart of Oak, and Jolly Angler, are as good as any, but there is a score as good as these, and if you send to Mr. T., who knows more of this class of fruit than any gardener, he may give you even a better selection; he is still where you say, and is a trustworthy dealer.

FLOWER GARDEN (Jonathan).—Your plan will be engraved, when your questions will be answered, with some observations of our own. It is a very useful plan for many places.

FRONT GARDEN (F. W.).—The usual way of screening off the house from the public road is by planting a hedge of common Laurels, as from gate to gate in your plan, the plants to be about four or five feet high, and to be planted a yard apart along the boundary, and two feet from it; that would be by far the most convenient way for you, then the whole border in front of the hedge would be at your service for a selection of such things as you like best. If you plant all with them, you will have no flower to speak of after June. Why not use perpetual Roses one-half, and such shrubs as *Ribes sanguineum*, *Pyrus japonica*, *Philadelphus Gordonianus*, which flowers in July, Dwarf Almond, Red Mezereum, Yellow and Silver Variegated Hollies, Evergreen Barbary (*Berberis aquifolium*), Darwin's Barbary, Forsythia viridissima, *Deutzia gracilis*, *Leicostera formosa*, Sweet Briar, with common and Tree Peonies, *Lupinus polyphyllus*, *Phloxes*, and a few Scarlet Geraniums in front.

OXALIS BOWII (Constant Reader).—The enclosed fleshy tuber-like thing is what we have all along called *fangs*. A section of the *Oxalis* genus make these fangs to convey nourishment to a new colony of bulbs, which settle at as far a distance from the old bulb as the farthest ends of such fangs, exactly as the "runner" from a Strawberry plant is meant to extend the young from the old plants. The *Oxalis*, by means of these fangs, year by year, would soon bury its new made bulbs in loose soil so deep that they would never flower. Your bulbs are quite right and proper; leave them as they are till next April, but not quite dry; by that time the substance of the fangs will be expanded in making a set of new bulbs for you.

TACSONIA MOLISSIMA (E. M.).—Your question has been answered in our articles on the genus. Your plant flowered in a greenhouse, and fruited also. You pruned it back to the main stem, and you are afraid there will be no room for it, which is all quite right, unless your house is a Crystal Palace, for this is the first climber we would plant in the new Palace at Sydenham. In three years it would reach up to the highest part of the centre transept. To get your plant under control, you must cut off so many of the roots every year, just as is recommended at page 105 of this vol.; and, besides that, a large portion of the annual growth ought to be trained outside the house, as there stated, in a good border. No ordinary greenhouse is large enough for the three *Tacsonias*, except for a few years. Get *manicata* and *pinnatifidula*, and inarch their young shoots into young shoots of *molissima*, then humour the three on the

same roots, and try and leave *pinnatifidula* outside every season. The other two "time about," that is one of them outside one year, and inside the next. The roots, the roots, the roots, of these *Tacsonias* are the things to manage, and to cut off every bit of young wood every year except the main leader, or leaders, but the more you cut them, without cutting the roots, the more they will not flower.

CLETHRA ARBOREA (Ibid.).—We should have no fears about it in that part of Dorsetshire against a south wall, but we would mat it the first two or three winters—it is about as hardy as the "Green Wattle,"—*Acacia affinis*, alias *dealbata*. It is very doubtful if the *Tacsonias*, or *Tecoma jasminoides*, would stand out there without good covering; but as you have plants of them, why not try them, and let us know. "A faint heart never won a fair lady," or proved half so many Gordon experiments, as the heart of spades.

CLOTTED CREAM (Ibid.).—That is the Devonshire fashion, and we know of no better way than working it by hand. A clergyman near us gets all the butter from three or four cows done "by hand," and prefers it to any other way. The new milk is scalded by plunging tin-pails of it in a copper of boiling water; the cream is managed in the usual way, and the butter is made by working up the cream in an open wooden tub by the hand, just as they work the yolk of an egg with a spoon.

WOODEN SHUTTERS.—"J. T. L." says, page 250, that he cannot get them six-feet-and-a-half by four under 10s. I have had some made after Mr. Fish's recommendation, three-quarters-of-an-inch thick, planed on one side, joined well together, fastened to three cross pieces, and a ledge round. My size is not quite so large as "J. T. L.'s;" his size could be made by my carpenter for 6s. 6d. each, cash. His address is R. Allen, Mile End, near Whittington, Salop.—J. P. O.

Cow (φ).—We cannot discuss such a subject in our pages.

AURICULAS, &c. (Bertha).—All the plants you mention can be raised from seed; but as you can buy them all very cheap, and you would have to wait a year or two for seedlings blooming, we advise you to buy plants.

SAND FOR POTTING (A Devonshire Rector).—The fine shell sand of which you enclosed a sample would answer very well for potting purposes. Even the granite sand from Dartmouth, if the black sediment was washed out from it, would also do very well.

MANURES (K.).—As you have no stable-manure you must use guano, ground bones, urate of the London Manure Company, super-phosphate of lime, &c. These will do for Turnips, or any other crop: super-phosphate and urate would, probably, answer your purpose. If you live near the sea, sea-weed will be a good store for you. Save all weeds, scorings of ditches, and any other vegetable refuse, in a pit, and have the house-slops emptied over them.

ICEBERGS (L.).—You will have seen what Mr. Beaton had written before your note arrived.

DYEING EVERLASTING FLOWERS.—A subscriber will be much obliged by information how to dye *Xeranthemums*, &c.

HARTLEY'S ROUGH PLATE GLASS (M. S.).—It is perfectly suitable for a vinery.

POULTRY DISEASES (W. Southcote).—You must advertise your capabilities. It is quite impossible we can recommend that or those totally unknown to us.

AUSTRALIAN LAUGHING PIGEONS.—A Pigeon Fancier wishes for a description of these.

HEN LAYING WHILST ROOSTING (E. F. S.).—Nothing is so easy to cure as this. Let her sleep in a place where there is no roost, and where she must consequently sleep upon the ground.

CANCER.—If "H. B." will send an address to the Editor, a private communication might be had from the party.

POTATOES WITHOUT MANURE (A. B.).—If your soil is fresh, and has been well trenched, you may apply thirty bushels of soot and thirty bushels of salt per acre, and be certain of a better crop than if you manured with stable-dung.

SHREWSBURY SNOW (S. D.).—It shall appear next week. If Secretaries of such Societies as advertise in our pages will oblige us by sending reports of the exhibitions we shall always insert them most readily. It is quite impossible for us to send special reporters to all.

MOTHERLESS CHICKENS (W. L. S.).—Feed them upon eggs boiled hard, and chopped fine, mixed with bread crumbs and a little barley meal or Indian meal. They only require this for the first fortnight. A little crushed hempseed, given once daily, mixed with their other food, is very beneficial.

NEST EGGS (A Subscriber).—Any turner of wood could make wooden ones for you.

DENDROBIUM (A Gardener, Liverpool).—No such specimen reached us; send us another. We answer all queries without the slightest preference.

SPANISH COCKEREL (W. Curtis).—Send an advertisement.

NAMES OF PLANTS (Ignarus).—No. 1. *Aspidium filixmas*. No. 2. *Aspidium dilatatum*.

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WEEKLY CALENDAR.

M D		D W	JAN. 26—FEB. 1, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
				Barometer.	Thermo.	Wind.	Rain in Inches.						
26	Th		Obisium trombidioides.	29.737—29.651	40—26	E.	—	50 a 7	36 a 4	6 17	27	12 52	26
27	F		Obisium orthodactylum.	29.791—29.739	40—36	E.	04	49	38	7 23	28	13 4	27
28	S		Obisium muscorum.	29.833—29.741	42—37	N.E.	—	47	40	sects.	29	13 16	28
29	SUN		4 SUNDAY AFTER EPIPHANY.	29.845—29.827	43—35	N.	—	46	41	5 a 33.	1	13 27	29
30	M		KING CHAS. I. MARTYR 1649.	29.795—29.716	43—25	S.W.	13	44	43	7 0	2	13 37	30
31	Tu		Chelifer Latreilli; bark.	30.204—30.086	47—24	N.	—	43	45	8 23	3	13 46	31
1	W		Podura plumbea; stones.	30.192—30.160	32—28	N.	—	41	47	9 40	4	13 55	32

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 44.7° and 32° respectively. The greatest heat, 67°, occurred on the 26th in 1834; and the lowest cold, 16°, on the 26th in 1827. During the period 101 days were fine, and on 68 rain fell.

NEW PLANTS.

DIDYMOCARPUS HUMBOLDTIANA (*Humboldt's Didymocarp*, or *Twin-fruit*).



This genus is closely allied to *Streptocarpus* and *Chirita*, and the species before us so closely resembles *Chirita sinensis* in habit, that it not improbably will be added to that genus. It is not the same as *D. primulifolia*, if the description of the latter be correct, which assigns to it a downy stem, and no radical-leaves, for *D. Humboldtiana* has no stem, and radical-leaves only. It is a native of the mountain districts of Ceylon, at an elevation of about 5,000 feet. It belongs to the Natural Order of *Gesnerworts*, and to *Didynamia Angiospermia* of Linnæus. The flowers are usually pale purple, but sometimes white, and open here during October in a warm greenhouse. — (*Botanical Magazine*, t. 4757.)

ERYTHROCHITON BRASILIENSE (*Brazilian Red-Tunic*, or *Erythrochiton*).

The name of the genus refers to the red calyx, and that of the present species to its native country, whence it came in 1842. It has a palm-like, branchless stem. The flowers are white, large, handsome, and come in succession through many months of the year. These qualities render it a very desirable ornament of our stoves. It belongs to the Natural Order of *Rueworts*, and to *Pentandria Monogynia* of Linnæus. — (*Botanical Magazine*, t. 4742.)

SCHÆERIA MEXICANA (*Mexican Scheeria*).

It so closely resembles *Achimenes* that it is very frequently known as *A. Scheerii*. There are two kinds, the purple and the blue-flowered, but which is the species, and which is the variety, is undetermined. It is a native of Chihuahua, one of the northern states of Mexico, whence it was received in 1850, by F. Scheer, Esq. It bloomed at Kew, in the autumn of 1852, and Sir W. Hooker says—“We have no hesitation in predicting that in a few years it will be found in every garden.” (*Botanical Magazine*, t. 4743.) It is a *Gesnerwort*, and belongs to *Didynamia Angiospermia* of Linnæus.

BERBERIS CONCINNA (*Neat Berberry*).

This is a very agreeable addition to our list of evergreen Berberries, and the more so from its dwarf habit. “It is allied to the *B. Sibirica*, also a single-flowered plant, but readily distinguished by the long tripartite spines, slender pedicels, and glaucous leaves; the latter, however constant a character in both our wild and cultivated specimens, is not a constant one in other species of the genus, and hence may prove variable in this. The seeds were gathered from small bushes growing in the Lachen valley of the Sikkim-Himalaya, at an elevation of 12,000 to 13,000 feet; it there formed a small low bush, one to three feet high, with spreading almost prostrate branches, thickly covered with small leaves of a deep green hue; and polished above, snowy-white and glaucous below; these colours, the large oblong scarlet berries, and red branchlets giving the shrub a singularly neat and pretty appearance when in fruit. The specimens in the Royal Gardens at Kew have come up perfectly resembling wild ones, and flourish luxuriantly in an open border.” — (*Botanical Magazine*, t. 4744.)

HEMANTHUS INSIGNIS (*Showy Blood-Flower*).

This bulbous-rooted plant is a native of Natal. It flowered during the August of 1853, at Kew, in a cool frame. It belongs to the Natural Order *Amaryllids* and *Hexandria Monogynia* of Linnæus. Flowers in large umbels, orange and crimson-coloured. — (*Botanical Magazine*, t. 4745.)

FOR the very valuable monograph of *THE GARDEN PEA AND ITS VARIETIES*, which we now commence, we and our readers are indebted to Mr. Robert Hogg, author of “*British Pomology*,” and other works.

Among the curiosities of garden literature in the present day are the seedmen's catalogues. Of all

shapes and sizes, from the great broadsheet to the bulky pamphlet and the stamped “price current,” they are as far in advance of those of the last century as the new edition of the “*Encyclopedia Britannica*” is of the first. But while they have so increased in volume, and improved in appearance, the question arises—Have they

done so to the same extent in utility? That we should go on from one degree of excellence to another is one thing, and a most desirable end to be attained, but to extend varieties and multiply the names of varieties for the mere gratification of whim or fancy is quite another matter, and leads to nothing but confusion, disappointment, and annoyance.

I have now before me three seed catalogues of the last century, varying in dates from 1780 to 1791, and each issued by separate establishments. The greatest number they can collectively enumerate of Peas is 23; of Brocoli, 5; of Cabbage, 8; and of Lettuce, 13; these I have selected as illustrations, and it will be allowed, that so far as the number of varieties is concerned they are amply sufficient for all purposes. But I have also before me three catalogues of the date 1853, also issued by three separate houses, and in these the collective enumeration of Peas is 88; of Brocoli, 47; of Cabbage, 46; and of Lettuce, 53, varieties! Need it be wondered at, therefore, that the public, and "the trade" themselves, are longing to be freed from such a chaos of names and nonentities. It is exceedingly desirable that we should have new varieties—the more the better. It is only in this way we can expect to improve as we have done during the last few years. Were it not for some step in that direction we might still have been confined to the *Charlton* for the earliest, and the old *Marrows* and *Marotto* for the late; but the time has now arrived when such old varieties as are found to be inferior to those of more recent introduction should be discarded. It is a complaint of daily occurrence that there is such a multiplication of varieties, and names of varieties; and some have ventured to attribute this to unworthy motives on the part of the seedsmen; but, as a body, I know the respectable part of the seed trade deprecate such a state of matters as much as any one, and glad would they be if the public would take the matter in their own hands, and ascertain what is really worth cultivating and what is not; if they would so make themselves acquainted with what they grow, as to be able to decide upon what is distinct and what is not. Much has been said, of late, endeavouring to inculcate the seedsmen. It is not for me to advocate the cause of any party, as I have no interest in the matter beyond a desire to "see things called by their right names," and, if possible, to reduce the number of useless and unnecessary names and varieties. But I believe much of the confusion has arisen with the public themselves; it is with garden vegetables as with fruits. A person becomes possessed of a first-rate variety, of which he has lost the name, or of which, he, perhaps, has never known the name; he is pleased with it, cultivates it, takes prizes with it, and, if of a liberal spirit, distributes it among his friends and neighbours: in course of time it is associated with his own name, is advertised as "a new thing," gains popularity, and "the trade" become possessed of it to enable them to oblige their customers. One-half of the world soon discovers it to be the same as something else, but the other half

will not believe it is so, either because they have not observation enough to see the identity, or because they have never seen that with which it is identical; and so they persist, year after year, to buy, and cultivate, and recommend it under the name by which they first made its acquaintance. And so it is with the Pea, Brocoli, Cabbage, Lettuce, and every other crop; and until the public use a little more discrimination they must continue to dwell in this state of bewilderment, and the seedsmen remain the passive agents of their patrons.

It is for us, therefore, to make ourselves acquainted as much with what we grow as we do with how to grow it; to exercise a little more observation, without taking things for granted, and then we shall have the remedy in our own hands. With this view, I, last season, determined to make myself acquainted as much as possible with the subject, beginning with the Pea and its varieties; and for this end I procured all the varieties of garden Peas which were to be obtained in London, under whatever and as many names as they were to be had, taking care that all new varieties were got from those houses which professed to supply them true and genuine. They were all sown on the same day, and on the same piece of ground, and were carefully noted at least once, but frequently twice a-week. In addition to this, I most kindly and liberally received permission from several of the wholesale London seedsmen to make free use of their sample grounds, in which they make trials of all the seeds they have supplied during the previous season; and it is from observations so made that I am now enabled to furnish some account of the garden Peas. The varieties are arranged in the rotation in which they came into pod.

TAYLOR'S PROLIFIC.

This is a very early Pea, earlier, if anything, than even *Sangster's No. 1*, but is of a more slender habit of growth. The pods are all strictly single, and are of the size and shape of *No. 1*, containing, on an average, from six to seven peas in each. The plant is two feet high, and produces perfect pods even to the top of the haulm, when the whole ripen off simultaneously.

Taylor's Prolific seems to be a very superior variety of the old *Early Kent*, from which it has, no doubt, originated. I obtained it from Messrs. Noble, Cooper, and Bolton, of Fleet Street, who seem to have paid particular attention to the preservation of the true character of this excellent variety. It was sown on the 29th of March, and fully slatted on the 8th of June; but, as regards earliness, it cannot be called more than a day before *No. 1*. It is a very good cropper, well adapted for forcing and early sowing, and in field culture produces, on an average, five quarters per acre.

EARLY KENT.

SYNONYMS.—*Prince Albert, Early May.*

This variety may be included under the same head as

the preceding, but it is very inferior in every respect—the pods being much smaller, fewer in number, and very much less productive. It is, therefore, now unworthy of cultivation.

SANGSTER'S NUMBER ONE.

SYNONYMES.—*Daniel O'Rourke*, *Waite's Daniel O'Rourke*.

This variety is of a slender habit of growth, more so than *Warner's Emperor*, and consists of a single stem two feet high, producing, on an average, from eight to ten pods on each plant. Pods generally single, but frequently in pairs; ten-inches-and-three-quarters long, and upwards of half-an-inch wide, quite straight, thick, and plump, and terminating abruptly at the point. When fully grown they become much swollen, broad in the back, and somewhat round, or quadrangular. They contain, on an average, seven, but frequently eight, peas. The ripe seed is white.

This, and *Waite's Daniel O'Rourke*, were sown in adjoining rows on the 5th of April, and came into bloom on the 5th of June; on the 9th the first blooms began to drop, and the slats (young pods) appear; by the 22nd the whole plants were nearly out of bloom; and on the 1st of July the pods were quite filled and ready to gather. I have

been most particular in my observation of these two varieties, as it has been said by some that they are distinct. That there should be no mistake, I procured *Sangster's Number One* from MR. SANGSTER, and *Daniel O'Rourke* from MR. WAITE. They were sown on the same day, came up on the same day, slatted on the same day, podded on the same day, and died off on the same day, after having attained the same height, and presented the same habit of growth. I have preserved the original name of *Sangster's No. 1*, because it holds priority of the other, and because I know, by my own personal knowledge, that this variety has been in that gentleman's possession for the last eight years. There are too many varieties already, without increasing them by multiplying the names of those that do exist.

This is a very valuable Pea, and should be cultivated in every garden as the earliest crop. As regards earliness, it does not surpass *Warner's Emperor*; but it possesses the desirable property of doing its work quicker than that variety, and as much so as the *Early Kent*, but possessing a much larger pod, and being more prolific. It is not so tall by some inches as *Emperor*, stops growing and blooming much sooner, and is ripening off when *Emperor* is still fresh and growing. In this respect it is very valuable to the gardener, as it enables him, after obtaining a prolific crop of early Peas, to clear the ground for something else.

WARNER'S EMPEROR.

SYNONYMES.—*Warner's Conqueror*, *Isherwood's Railway*, *Morning Star*, *Rising Sun*, *Emperor*, *Conqueror*.

Plant of a slender habit of growth, always with a single stem, which is two-and-a-half to three feet high, and produces from eight to ten pods on each plant. Pods generally single, but frequently in pairs, from two-and-a-half to three inches long, perfectly straight, and terminating abruptly at the end. They are well-filled, and contain from five to seven peas, which are roundish and flattened, seven-twentieths of an inch long, six-twentieths broad, and the same in thickness. The ripe seed is white.

The seed was sown on the 5th of April, and the plants came into bloom on the 5th of June; the blooms began to drop on the 9th, and on the 1st of July the pods were completely filled, and ready to gather.

Too much cannot be said in praise of this as an early variety; but, as remarked under *Sangster's Number One*, it does not get so quickly off the ground as that variety.

R. H.

(To be continued.)

LIKE the *Bourgeois gentilhomme* who discovered that he had been talking prose all his life without knowing it, many of our readers will, ere this, have discovered that they are every day putting in force some of the best means for preventing disease and prolonging life.

If more than 100 or 120 persons cannot dwell together on each acre of ground without the air of the place being sensibly worsened, it is clear that where each house has a garden attached any dangerous amount of over-crowding can hardly take place. The constant demand for manure in a garden, must tend to diminish the standing nuisance from cesspools, sewerage, and so forth. Many of the same laws govern animal and vegetable life, therefore it follows that the healthy or unhealthy condition of ninety-nine out of a hundred garden products is the very best eudiometer or measurer of the salubrity of any situation. Thus, if the whole air be so smoky as to affect the growth of flowers and fruits, it will affect children's lungs also. Smoke or soot (carbon), in descending from the upper air, imbibes and fixes all the exhalations from the bodies and lungs of a dense population below, so long as it is newly burnt, warm and dry, in virtue of a law already explained. But, on becoming cold, damp, and over-charged with ammoniacal matters, the soot at length begins to give out again, in low, moist situations, all the noxious compounds previously imbibed. And, although coarse herbage and some descriptions of trees may

thrive under such stimulants, and great, hearty men, in the prime of life, take no great harm in a smoky atmosphere, yet it makes sad work with children and delicate people, and with delicate plants.

Another great sanitary law is, that inside a house or room each individual requires at least 500 cubic feet of space, or nineteen cubic yards, or a cube of eight feet each way, in height, length, and breadth, to respire in, due regard being had to ventilation. This is known and acted on in such institutions as model prisons and lunatic asylums, but at balls, routs, concerts, lectures, schools, theatres, public meetings, public houses, and other places of public recreation, falsely so called, no regard at all is paid to this simple requirement. Gas-burning greatly adds to the contamination of the air. (During the last visit of cholera, the Edinburgh College of Physicians even cautioned people against crowding to their favourite evening chapels.) A needless sacrifice of life takes place every year among the young, from crowded school-rooms, and insufficient play ground and want of holiday-making. We have noted very many cases of sudden death clearly traceable to the excitement of political meetings—a sort of intoxication far more besetting than that of the accompanying beer barrel. The ancients had a name for this social disease, which, with them, assumed the form of epilepsy.

How few of these evils affect those who live in the country. Children there have room enough to play in; and seed time, hay time, and harvest (according to the reports on education), are always made holiday of. And then (right or wrong) country people leave a great deal to their superiors in political matters, and they live the longer for it. Half-a-century ago, a north-country farmer was asked what he really thought about the state of affairs. "I think, indeed!" he replied; "don't you know that Lord George Cavendish thinks for Furness Fells, and Charles Fox thinks for Lord George Cavendish!" On the contrary, the Americans (according to Lord Carlisle) are all politicians, and always unhappy and unhealthy. The chief danger of crowds to our country people arises from their staying too long for their own good, or that of their cattle, at great markets and fairs. It is a safe rule to "Give a market price, and take a market price, and get home by dinner time."

A very numerous class of sufferers, however, calls loudly for the abolition of the smoke nuisance, and the extended occupation of suburban gardens, with an encouragement of the allotment system, and removal of needless restrictions on the sale of land *in and about towns*.*

* Cato says—The countryman has the fewer bad thoughts; his property binds him to the state not so much as a pledge, but by stronger and better ties of feeling; and it is natural that a labourer wholesomely exercising the bodily powers, not performed in gloomy dwellings, but in the unrestricted light of nature, in sunshine and storm, should preserve the mind sound, cherishing a sobriety and keenness of observation, a quiet, unbiassed judgment. The freeholder who cultivates his own field enjoys, in the progress of the seasons, and the nature of his employment, an unvarying, a liberal relaxation, without which it is impossible that mind and body can be maintained. The city operative scarcely recruits his strength on the holiday; he allows himself no respite from toil; dependent on those to whom he looks for favour, he feels, or is the object of the jealousy of trade in which one party is ever clashing with another; he wants the calm self-confidence inspired by permanent property. The ideas of the peasant are lively and pleasing, because their number is confined; those of the townsman are confused by obscure conception and misapplied language. In the country the national race is kept up; towns are made up of all nations and lands. [Niebuhr.]

New public parks and pleasure grounds for the living are more generally needed than even cemeteries for the dead and hospitals for the sick and dying. In planning suburban residences for working men (where land is comparatively cheap), either open squares should be laid out with garden-plots to the front of the houses, or enclosed, hollow squares, for greater seclusion, with the gardens behind, after the Eastern fashion. All our good things in the shape of free commerce, education, and free institutions will soon be lost to us, unless we give our fellow-countrymen free air, and, above all things, habits of personal cleanliness and purity.*

The signal fall of many great cities has been traced to both moral and physical causes of corruption. All crowded places near the level of the sea are especially prone to all the known forms of epidemic disease, from which, however, an elevation of 100 or 120 feet gives a comparative immunity, and 350 or 400 feet a very great immunity indeed (as Mr. Farr tells us); 350 feet happens to be precisely the height of ancient Jerusalem; though Tyre, Sidon, and all the once proud, and wise, and rich cities of Phœnicia were by the sea shore—Damascus, one of the oldest cities in the world, still numbers 150,000 or 200,000 inhabitants. It stands at an elevation of 2,200 feet. But it is with its beautiful suburban gardens than we have at present to do. According to Col. Chesney [*Tigris and Euphrates*, v. ii]—"The city is embosomed in flower and fruit-gardens, dotted here and there with kiosks shaded with trees; the whole forming a wooded belt of thirty miles (some say fifty miles), at least, in circumference, terminated at one side by an almost boundless wilderness."

A part of the river which waters all these gardens, is here lost in pools and marshes, and, accordingly, no wonder that when the wind sets in from this quarter "intermittent fevers prevail in autumn; yet, on the whole, Damascus must be accounted a healthy city, and in it *aged people are very numerous*." Now, we have the authority of Mr. Simon, for stating, that in the city of London *few people reach to three score years and ten*.

J. J.

RENOVATION OF OLD GARDENS.

I HAVE heard it said oftener than once, that the reason why "Uncle Tom's Cabin" was read simultaneously, as it were, all over Europe, was because *The Times* spoke out so strongly against it on its first appearance. I have myself acknowledged, over and over again, that Mr. Cobden gave a great impulse to the circulation of *THE COTTAGE GARDENER* when he proposed his scheme for buying freehold allotments, as I shall call them. Those who aspired to be prime councillors, if not prime ministers, advised *their* trade associates, all over the country, to do as Mr. Cobden wanted them to do, and

* The cleanness of the body is a symbol of the purity of the soul; external purification is called sanctification, because it makes those observe at least an outward purity who draw near to the sanctuary. Cleanliness is a natural consequence of virtue; since filthiness, for the most part, proceeds only from sloth and meanness of spirit (and we generally find cleanliness practised in proportion to the prevalence of a spirit of genuine piety). It is certain, the nastiness in which most of our lower sort of people live, especially the poorest, and those that are in towns, either causes or increases many distempers. [Floury.—Ancient Israelites.]—J. J.

after that to take in THE COTTAGE GARDENER, to see and learn how to manage the new freeholds; so they did; and after draining, trenching, and cropping, on the true Erringtonian system, the new freeholders began to lay siege to these pages for advice about flowers, climbers, pigs and poultry, about ewes and lambs, Swedish turnips, bees and pigeons, till, at last, these freeholds were as full as nuts. After all this we—the staff and standard of the onward progress—thought it would be all plain sailing with us—no more new dodges to think, or write, about; but no, we were then threatened with civil war and open rebellion—first come, first served—fair play loudly called for by the fairest portion of creation and English law, ditto by good judges. I want—and I want—and everybody wanted, just everything except what everybody else wanted not; and, indeed, there were so many interests “wanted” in our pages and in our camp, that we had to *diplomise* as cautiously as if we had been one of “the Four Powers.” Yet, after getting over the “crisis,” here we are again as deep in the mud as ever by the doings of the “Encumbered Estates Commission” in Ireland. Hear what our correspondent, *Carrig Cathol*, says, all the way from Dublin. “We have just taken possession of an old place, to which there was appended, ‘once on a time,’ very fine gardens; at present, there remain fine garden walls and the skeleton of once a grand conservatory and vineries. I look forward to a busy and pleasurable spring, hoping to profit by Mr. Errington’s excellent advice in restoring an old (in this case, ruined) garden to some order before many months have elapsed. It would serve and gratify me, and probably many others, if he, or some other of your corps equally capable, would take in hand ‘The renovation of old shrubberies,’ with a list of those good hardy and half-hardy shrubs introduced within the last ten or fifteen years;” and so forth.

Whatever may become of Ireland, one thing is certain of the Irish themselves, they excel all the nations of the earth, when they appeal to the best feelings of our common nature, be they in love, law, or logic, and my young Cedar of Lebanon must stand over, without thriving, for another week or two, as a proof of the assertion to begin with.

Now, for the sake of Old Ireland and all that is Irish, let me entreat of *Carrig Cathol* not to cut down a tree or shrub in this “old place” until he has well considered all the pros and the cons, inside, outside, and all around it. Nothing is easier than to pull down trees; any blockhead can do that. There is a story about a chopping-block, which stood years in the back kitchen of an old Irish mansion, which sprouted at last, and was transplanted, and formed a fine tree after all; but all the blocks chopped upon in Ireland for the last year or two, or for the next half dozen, may not be so excitable, and anyone who will try the experiment, by cutting down trees and setting their blocks or bottoms for chopping on, without well considering what they are about, ought to have their own heads—no matter where.

If I took possession of an old place in Ireland, or elsewhere, the first thing I would do would be to put the kitchen-garden, the vineries, and conservatory, with all the offices, in good, thorough repair. Also the carriage-road, and other roads necessary for more private use. In doing that, I might find that a better line for any such roads might be taken; that, again, might involve some fresh planting in different places; at least, I would settle all that, and get a plan drawn out of all the main improvements before I would fix on what alterations I would make in the old shrubberies and pleasure grounds, as, no doubt, many of the trees and shrubs require to be thinned out, and if they, or any of them, could be transplanted, that would be better than cutting them down. Good planters could remove

very large trees and shrubs if they were properly prepared, say by cutting round their roots at three feet from the stems, all round, this next spring, so as to be ready to move next October. We might gain fifteen or twenty years by this way of going to work, besides having the newly transplanted things more in character with the rest of the place.

After that, I would fix on all the best specimens that could be left in their present position, and put them in proper trim by the knife, saw, or hook, but instead of rooting up all those that were interfering with the best specimens, I would first consider whether any or most of these could come in useful for me before my improvements were finished, and if they would, I should be loth to destroy them, and it is always time enough to throw away things when we are sure we do not want them. Still, I would not allow very common things to interfere any longer with better things; I would cut them down to the ground at once, and I would dig the ground about as deep as possible, or even trench it, and in doing so there would be a good opportunity for cutting-in the roots of the cut-down plants, as you would those of herbaceous plants in a mixed border. Very old Lilacs, Syringas, Guelder Roses, Privets, Laurels, and a hundred more such, could thus be renewed in one season, so as to make a respectable appearance, and to be ten years in advance of similar kinds brought in from the nurseries, and they would easily remove and come in useful somewhere else, after one or two season’s growth where they now stand. There is hardly an old shrub in the country, evergreen or otherwise, which might not be improved, in some way or other, so as to be of as much interest, or even novelty, as any of the more recent introductions.

Bear in mind what I have said, long since, about making standards and half-standards of Laurels, both common and Portugal, Privets, Alaternus, Phyllerias, Sweet Bay, as well as of every one of our common shrubs, and there never was a better opportunity for making them than when an old shrubbery is to be thinned or condemned. Every old shrub that is cut down to the surface of the ground, be it worn out ever so much, will throw up one or more strong shoots the first season, and if you confine the growth to the strongest shoot, there is a standard for you at once, if you help it on by summer pruning; and then, if you only remove suckers from it when you come to transplant it into fresh soil, you have, perchance, the work of six or ten years all ready in one season, and spare you no end of money, besides setting you up with such plants as are thought, now-a-days, very fashionable. A few years since, I made a nice standard of an old stool of the Fly or French Honeysuckle on this plan, and I recollect that a duke’s gardener, and one from a noble lord’s place, both were puzzled the same week, to know what it could be; and others thought it to be the *Weigelia rosea*, because it stood in one of the best situations about the garden, but no one looked at it, or if they did, thought very little of it, all the years it stood straggling among other shrubs. A standard of the snow-ball Guelder Rose is as pretty a plant as the newest from California, and an old stool of it, cut down this spring, will make a stem as clean as a ramrod, and as tall as any man, in one summer. Many of the common Spireas make the prettiest little standard plants you ever saw, and so with all the rest of the very oldest shrubs; and I can tell, from my own experience, that great people, now-a-days, think a great deal of this style of plants, but we are not tied to standards for all that; and if we like bush plants better, the old shrubbery will furnish them as fresh and much stronger than the purse, if we mind what we are about. At all events, I do not advise any one to cast off old plants merely for being old, and only requiring a little management

to make them young enough, and of any shape required.

To give another turn to the question for and against an old worn-out or choked-up shrubbery, and suppose that any of us, wishing for a fresh start, sent an order to a first-rate nursery for an assortment of all the new shrubs and low trees that have been introduced for so many years past, with only this one restriction, that none of these should be sent us for which more than a guinea is charged, but of those under half-a-crown a-piece send six of this, ten of that, and fifty of the other, and so on. Now, where could all these be better provided for than in this very old shrubbery, after all the old shrubs are rooted out, and leaves and their ashes spread over the ground, which is then trenched three spits deep, taking up six inches of the very bottom to be mixed with the best soil in the trench on the surface; surely the young stock will take to this deep wrought soil at once, and we may plant them now so thick as that in two or three years two-thirds of them may be removed to other places, which is all quite true; but still I hold to my first tune. There are so many irons in the fire when one begins a new place, or to improve an old one, that some must go to the wall, or come off second best; and if we made up our minds to do away with every plant in the old shrubbery, except some very fine specimens, and that the whole ground is to be renewed at once by deep trenching, as above, there is a cheaper, more safe, and much better way of managing the young plants from the nursery than that of planting them at once on the site of the old ones.

The moment I made up my mind about the number of new plants that I could afford to buy and pay for in one year, I would order them at once, and I would plant them in nursery rows, in a new-trenched piece of ground in the old kitchen-garden, where they would be ready for my hand at any time when I was ready for them; but I would not consider it as just ready for planting when the site of the old shrubbery was trenched, because such ground is sure to settle down uneven. Root weeds are not all taken out at once, there will be roots, or bits of suckers from the old plants, that you cannot get rid of till they show where they are by next growing season; and besides, the shrubbery ground is yet too much exhausted by the old roots to furnish the necessary supply to a fresh crop of similar quality, which is the greatest objection of all. These objections could only be got over by allowing the newly trenched ground to lie for a season under some cleaning crop, that is, a crop which would allow of the ground to be worked or stirred between the rows or plants; and when this crop was removed, the whole ground would be dug over and made even on the surface. All this would mix the fresh soil that was brought to the surface at the time of trenching with the rest of the surface-soil more properly, and then the whole would be in a much better condition, in all respects, for planting the *young* trees; if, in addition to this, we could afford to give two or three spadefuls of fresh compost from a prepared heap to each plant, as the work proceeded, I should say the whole put together would be as much as any planter could do under the circumstances.

Again. Suppose we decided on the plan of destroying all but the very best plants in the old shrubbery, and finding that the nature of the subsoil did not promise a safe addition to that which is worn out already, what is to be done? Why, in that case, the best plan would be to make single groups of such best plants by leaving a few of the inferior ones round, or near them, for a time, then merely level the rest of the shrubbery ground, and turf the whole of it up to the very boughs of such groups, or single specimens, and to have no dug ground at all on the old site. This last plan would make the most telling improvement in the shortest time, for

shrubby borders are entirely out of fashion, except in limited places near large towns, where one likes to have a little of everything. This does not affect the question whether newly planted trees, or shrubs, are better in dug beds, in groups, or singly, in open spaces on the grass. It is certainly better for old trees or shrubs to be planted in beds or spaces that can be stirred over the surface for the first few years. If you only plant a common Beech, on a corner of the lawn, or pleasure-ground, you expect it to grow faster and to be more vigorous than another Beech-tree planted out in the park or forest, because it is under the eye of the gardener. To meet your wishes, the gardener makes a hole four feet in diameter, and as deep as his ground will allow of, for the Beech, and he mixes two barrow-loads of good soil with the best soil from the pit for planting the tree in; he raises the soil in the centre of this pit six inches above the grass, and plants your Beech, then stakes it, and reduces the size of the pit one-half by laying the turf so far rising in a very gentle slope; he waters it in the summer, and if you notice how fast it grows, he will be sure to water it the more, and to give liquid-manure at times; but if you grumble at him, and say the Beech will never make a big tree, he will take you at your word, and the tree may go to Halifax sooner than he should water it again, unless you are on the spot; and if you are, forced growth does not suit Beech-trees at all. As soon as the roots of this Beech get away below the grass, and out of the influence of hand-watering, he covers the space over with nice turf; and the soil has now settled so much that you can perceive but a slight rise from the rest of the lawn. What is right for a Beech-tree, in a garden, is right for a whole shrubbery. As soon as the plants can take care of themselves, the best and cheapest way is to turf up to them.

On the other hand, if you desire to have a group of evergreen Oaks here, another of scarlet American Oaks yonder, and so on, with groups of one kind or of mixed kinds, there is another rule for them;—the gardener gets as many long poles, sharp at the bottom, as you want plants in the group; he whitewashes the poles as he would the walls of his cottage, and, may be, he will fasten a bunch or branch of the kind of tree to the top of each pole, and he sticks them in the ground just where you want the group, and at such distance from each other as he thinks necessary for the trees to stand apart, and there they will remain for your honour until you can judge of them from the drawing-room windows, or from the front or back-door, or from a bend in the carriage-drive when you return from shooting. When you decide on the very places for the trees, or shrubs, the rule is to break-up and trench and heavily manure the whole space all round and between the white poles; the more irregular the outline, the more knowing your friends and neighbours will take you and your gardener to be; for you must always bear in mind that all these improvements are carried on by *us* and *we*—no matter which of you is master. The right trees are planted, at the right time, where the poles stood, and the rest of the dug, or, rather, trenched ground, is planted with a mixture of evergreens and flowering shrubs,—perhaps Hollyhocks, and other tall, shrubby plants; all these will pay for trenching and for trees, and nurse up the principals to the bargain; but none of them are allowed to hurt the principals by roots or branches, or by shade; out they go, one after the other, as fast as they seem to be in the way of their betters—the principals; the turf proceeds from the outside just as rapidly, and in the same proportion, till at last there is none left to cover, all the temporary plants being removed, and no signs of a clump or shrubbery behind, except that the grass is more green where the ground was loosened; and for that matter, who knows but the very

shades of the beautiful trees caused that striking greenishness—if there is such a word—and so on with all the groups in the garden. Groups of ornamental trees, in a park, and the largest forest plantations, are, or ought to be, planted on the same plan; the principal trees are planted at some given distance apart, so that if you cut down the first, third, fifth, seventh, or any other numbers, the rest will stand at equal distances, and between these come the nurses.

The ground ought to be well and deeply trenched for all groups of ornamental trees, in a park or garden; and for single trees, in a garden, it is better not to go so deep, if the bottom soil is not very good, as when the roots get into bad soil the branches get mossy, and the tree looks bad. When you move a large plant from an old shrubbery, whether the roots are prepared beforehand or not, I would strongly advise some rich compost to be used in planting it in a new place, or else some very rotten dung to be mixed with the natural soil of that place; this is to prevent the tree, or shrub, from standing still for a season or two. Nothing pays so well as a generous treatment at first for all large trees that are moved, or for small ones, when it can be done. For mulching young or old plants after planting, the best thing is short littery dung, half-rotten; and the next best is tan fresh from the tan-pits; and the third best is the same after it is used for bottom-heat in pine or melon beds. All plants of any value ought, certainly, to be mulched the first year, at least; but fresh tan will last three summers if it is an inch thick at first; and birds are not so apt to scratch it about as they do any kind of dung.

All this applies, generally, to such places as our Irish friend has got into, and yet, perhaps, not particularly to his case. He was among our earliest subscribers, and has followed us out through thick and thin, and now it is but right that each and all of us old writers should give him a lift as far as we can understand his newly-acquired property; but either of us, on the spot, could tell him more to the point in one hour than we can by writing till our fingers ache. Next week I must report the meeting of the Horticultural Society; but I shall soon give him such a list of the best new and old plants, and all that I can think about them, as will make a standing reference for the whole of the season to many more besides him and D. BEATON.

A GROUP OF PLANTS OFTEN ASKED ABOUT.

EGG PLANT.—This is the *Solanum melongena ovigerum*, and of this there are varieties with violet, red, and yellow-coloured fruit; but the white is the great favourite with our young friends, as it so closely resembles a common-sized egg, only being more transparent and shining. I recollect, a few years ago, when a large, fine plant of the white variety engrossed more attention in a corner of the greenhouse than any other plant in the garden. Another variety, *Solanum melongena esculentum*, is chiefly distinguished for the prickles on the stem, leaves, and calyx of the flower. None of these would be cultivated either for the bloom or the foliage. The fruit, or, rather, its hard external shell, is the attraction. There is a little difficulty in getting a good healthy specimen in-doors, owing to the plant being very liable to the attacks of green-fly and thrips, for which fumigation and syringings are the only remedy. So liable are these plants to these insects that I have frequently bundled good specimens to the rubbish-heap lest they should infest more valuable things in their vicinity. I have never tasted them cooked but once, and that was enough, though fried with butter,

pepper, salt, &c.—appurtenances with which even flint stones are said to yield a rich sauce—but I do not profess to be a judge in epicurism. When well-ripened, and kept dry, the fruit may be preserved for many months. In March, it will be desirable to sow the seeds in a hotbed, and to prick the plants off as soon as they are three inches in height, placing three round the sides of a four-inch pot. In a few weeks they will want a pot of that size for each plant; and, by-and-by, another shift will be wanted. As the month of May comes more air must be given, so as to lower the temperature, so that the plant, after frequent shiftings, may stand in an eight or ten-inch pot by the middle of June, when it may be transferred to the greenhouse, after being gradually hardened off by more and more air being given to them in the hotbed. If the situation is warm, and a south wall has an empty space, a number may be planted out there, and trained close to the wall; but they will not ripen kindly unless in a warm season and in a sheltered place. The soil used for pots should be light and rich, consisting chiefly of loam and leaf-mould, or very decayed manure. Plenty of water must be given during the growing season, and no lack of the syringe over the foliage, or it will be impossible to keep the plants in a healthy condition. The Egg Plants are natives of Africa.

CAYENNE PEPPER AND CURRY POWDER PLANTS.—These, when unadulterated, are the produce of different species and varieties of *Capsicum*. The word is derived from *kapto*, to bite. I once saw a mischievous little urchin, who would try his fingers and lips upon everything within his reach, so stung with setting his teeth through a cherry-shaped *Capsicum*, that I thought he would never bite more. To add to the mischief, he had worked the fruit between his fingers and thumb, so as to break the skin inadvertently before he pounced it into his mouth, and then, in his agony, he must needs rub his nose and his eyes with these same fingers, until he screamed and danced with torture.

The kinds generally cultivated are almost endless varieties of *annuum*, consisting of various forms and colours of fruit, natives of India and South America—*cerasiforme*, cherry pepper; *baccatum*, the bird pepper; *grossum*, the bell pepper; and *frutescens*, the chilies, or Cayenne pepper; though the latter pepper is made from grinding the seeds and outside coverings of all sorts, especially those that are red. The last-named kind, if kept in a plant-stove, pruned back, and fresh potted, or well top-dressed every year, will yield large crops for a number of years, and from its habit will be neat and compact to look at.

The fruit is used for pickling when green; for mixing with other pickles; for placing in vinegar, so as to form Chili vinegar; and for grinding, as we have seen, when ripe, for pepper; and when in this ripe state the plants have a very gay appearance in the front of a vinery or a greenhouse; as, unless in favourable situations, they do not often ripen sufficiently in the open air, though forwarded under glass until the end of May. Some years ago, some poor attempts at wit were made by associating the name of a nobleman with the recommendation of a little curry-powder, in a glass of warm water, to the labouring man, when wet and weary; but we know, from experience, that a very little of this powder, or Cayenne pepper, or a few drops of Chili vinegar, in such a tumbler of water, if not too often repeated so as to give a false stimulus to the stomach, will not only be grateful, but check many an incipient disease that springs from wet and cold.

In growing these plants for pickling, the seeds (which may be kept in their ripe cases until wanted) should be sown under glass, towards the end of March, and if in a hotbed all the better. As soon as the plants are four inches high they should be pricked off, either singly in

small pots, or four in a five-inch pot, and well watered, syringed, and smoked for the green fly, and shifted again, if necessary, until the first or second week in June, when the plants may be turned out into nice mellow soil, in front of a south wall, in front of forcing-houses, or on a south border, when a good quantity of green fruit will be obtained in September and October.

To obtain beautiful plants with ripe fruit, for the greenhouse, the plants would require to be shifted separately, or three in a six or eight-inch pot in May, and be kept rather close until they were moved to the greenhouse about the end of June. Good drainage should be given, the soil should be light and rich, plenty of water given both to roots and foliage, and green fly started as soon as one presents itself. Nice *Chili* plants may be grown separately in six or eight-inch pots, and, if not potted every year, they should have the old surface-soil removed, and fresh added, of equal portions of loam and rotten dung. In addition to this, they will drink in manure-waterings with avidity. When a number of kinds are grown, few things look more beautiful in a house in the autumn months than nice plants well stored with ripe fruit, of various shapes, sizes, and colours.

THE CAPER PLANT.—Some well-to-do people would think the best beef but poor fare without a supply of Horse-radish and mustard, and to them Caper-sauce has an indissoluble association with boiled leg of mutton. The plant from which the true Caper is obtained is the *Capparis spinosa*, a rambling, trailing-like, spiny shrub, that flourishes in dry soils somewhat calcareous, and in situations fully exposed to the sun, in the south of Europe, the Grecian Archipelago, the Levant, and the northern shores of Africa. It has been tried in many parts of England, but, though it has lived many years, it has seldom produced many flower-buds unless when under glass. In an orchard-house, or fastened to a conservative wall covered with glass, there is no doubt but it would grow and produce its flower-buds in abundance. In such circumstances, or even on dry, warm positions in the south of the island, the practice followed out near Toulon would be the best to adopt, namely, to get the base of the shoots well-ripened in the autumn by a strong sun, and withholding water; and then, towards winter, cut the shoots well down, and cover the stools with moss, or earth, as we do with large Fuchsia plants that we intend to furnish us with strong flowering shoots from the bottom next summer.

When grown in a pot in the greenhouse, the pruning should not be anything so severe, but the treatment should be regulated, so as to supply a great number of young shoots not over-strong, and yet strong enough to yield abundance of flower-buds. A twelve or eighteen-inch pot will grow a nice plant; and loam and peat, with a little chalk or lime-rubbish, will suit it. It is easily propagated by pieces of the shoots, and divisions of the roots, and also by seed, when obtainable, but then it should be sown as soon as ripe. The plant can scarcely have too much sun after it begins to grow.

As an ornamental plant, the Caper is rather attractive; the flowers are numerous, large, white, with veins of lilac and red at times, and the centre filled with almost numberless stamens. The fruit is also used for Capers, but the chief supply is obtained from the flower-buds, which are picked when half the size they would be before they expanded. They are then placed, as they can be obtained, in a vessel, and covered with vinegar holding salt in solution. To keep them nice and green, a preparation of copper is often used, or they stand in a copper vessel, or, when arranging the Capers according to their size, they pass through fine copper sieves; but, in this respect, those who eat them just run the same risk as those who indulge in the use of nice green pickles generally—that greenness being the consequence

of copper in one shape or other. The public, however, will have their pickles green, and they get them—a doctor's bill, a shortening of existence, are minor considerations. One of the best and easiest-procured substitute for Capers is the green seed of the *Nasturtium*.

CASTOR OIL PLANTS.—Our young friends are quite at liberty to trace a connection between these stimulants to eating and the produce of this latter interesting plant. It is the *Ricinus communis* of botanists, and *Palma Christi* of gardens, owing to its spiny capsules, and its broad, palmate-like foliage. When at home, in Africa, it must have a splendid appearance, as it there takes the form of a tree. In our gardens it is a tender annual. I have sometimes seen it prove its hardiness, the seeds having fallen on the ground, and sprung up the following summer. In general, however, it is best to sow a few seeds in a hotbed in the middle of March; harden them off by degrees, and transfer to rich soil in the open garden in the beginning of June. If the plants have had a shift or two previously they will become all the better specimens. The oil is obtained from pressing and crushing the seeds when ripe, and its strength or virulence will greatly depend on the amount of pressure, that coming from the outer coats of the seed being much milder than that supplied from the interior parts. The oil obtained from the seed of some other spurge-worts is excessively acrid.

R. FISH.

BADORGAN, THE SEAT OF F. O. MEYRICK, Esq.

This place is situated in the pleasant Isle of Anglesea, in North Wales, and the gardens are managed by my friend, Mr. Ewing, the inventor of the so-named *Glass Walls*. I had for some time been desirous of seeing these structures, in order to judge for myself, and try to form a correct opinion as to their fitness, utility, or beauty, as garden buildings. The one erected in the Horticultural Gardens, at Chiswick, I have never seen; but I judged, and I think rightly, that if there was any merit or usefulness in them, I should be most likely to see it exemplified in the gardens under the charge of the inventor. I had read, in various gardening publications, some brief accounts of them, and, in some instances, a large amount of a depreciating character of their usefulness.

I had occasion to visit North Wales on business, and resolved to take time by the forelock, and pay these celebrated gardens a visit, even at this dull time of the season. I endeavoured to divest my mind of every idea I might have formed for or against Glass Walls previously to reaching the place, and I think that I am now prepared to give a fair report of them and the fruit-trees growing within them.

For the benefit of such of the readers of *THE COTTAGE GARDENER* as may not know what is meant by Glass Walls, as exemplified at Badorgan, I will try to describe them. In the first place, there are a certain number of square brick pillars, in two parallel lines, built so as to receive and support, at the level of the soil, two lines of bearers, inclosing a space of ground, as near as I could judge, twenty inches across. Upon these bearers there is set up, quite perpendicular, two rows of glass lights, or frames, with pillars between them. Their height is eleven feet, and the top is glazed also. Every other light is on both sides made to open by means of a long rod with cranks attached to it, and a revolving wheel at the end. I saw them shut and opened with the greatest facility. The top of this double wall of glass is ornamented slightly with carved bordering, and the whole presents a light and elegant appearance. Inside there is a trellis to which the trees are trained. Peaches are planted on the south side of the trellis, and Apricots

on the north, and the trees nearly reach the top, and must, when in foliage, and full of ripe fruit, and the frames set open, be a very ornamental, agreeable sight. The roof, also, is moveable by a similar contrivance.

The question naturally arises. Are they worthy of adoption in gardens generally? I give it as my decided opinion, after a careful and dispassionate study of the subject, that, with some modification, they are. I am quite willing to allow that as a means of defence they are not. I would only use them as an elegant and useful division of a garden. The first, any one that has seen a Glass Wall will at once allow; and the usefulness, I think, may be equally made manifest. As a means of shelter from the cold north wind, a wall of glass will be equally as effectual as a wall of bricks, and certainly ten times handsomer. Then, the use as a fruit wall is more certain still; for every tyro in gardening knows that a fruit-tree under glass is more certain to produce fruit than one exposed to the atmosphere, even with temporary shelters when in blossom. Under the sheltering influence of this double row of upright glass the flowers will be sure to expand freely, and the fruit set equally as freely, because the free current of air, rushing through the trees every mild day when full air is given, will cause the fruit to set. The ripening of the fruit is also certain to go on satisfactorily, and by having light on both sides the colour will be equally full on every side of each fruit; and, lastly, that important point, the ripening of the wood, will, in such a structure, be certain to be accomplished better than against the common brick wall. Thus the three great points, of preservation of the blossom, maturing the fruit, and ripening the wood, is secured by such a Glass Wall as I saw at Badorgan.

I examined the trees very minutely the first week in this year, and can bear testimony to the perfect state of the wood, the plentiful appearance of round, plump, and healthful blossom-buds, and the particularly clean, bright colour of the bark.

At one end, Mr. Ewing had planted a Fig-tree, on which he said there had been a heavy crop the previous summer, and there was, when I looked at it, also a heavy crop of fruit about half-swelled, quite fresh and sound; whilst on a brick wall close to it the fruit on another Fig-tree of the same kind was completely destroyed by the frost.

The only point I cannot prove is, what kind, if any, was the fruit on the Peaches, Nectarines, and Apricots, during the past season. Mr. Ewing—"and he is an honourable man"—declared to me that the crop had been good, and the fruit excellent in quality; and I believed him. Is there a man living who would not?

I have now stated, fairly and conscientiously, all that I consider the good points of the Glass Walls, as I saw them here. They are, undeniably, beautiful structures; they are useful, because the trees enclosed are certain to produce an abundant crop of fine well-ripened fruit; and another point, which I have not alluded to before, is that there are no hiding places for noxious vermin or insects, as in the old nail-holed brick wall.

The improvements, or modifications, I would suggest, consist in making the enclosed space wider, so as to allow space for a spectator, or the gardener, to walk between the two rows of trees. An iron trellis to walk on might rest upon bearers from the pillars that support the structure, and thus the pressure upon the soil would be avoided. I would, also, have means of giving air below the glass lights and above, by opening the roof only, thus avoiding the risk of breakage from sudden gusts of high winds blowing against the open windows and the trees. (I have to notice another Peach-house in these gardens where this point is adopted.) Another improvement would be the introduction of divisions, glass of course, in the wall, one or more of which divi-

sions might be heated with hot-water; and thus a succession of crops obtained.

In another part of the gardens there is a noble Peach-house, which may be termed a glass-covered wall. It is three hundred feet long, six feet wide, and thirteen feet high. The glass front is perpendicular, and the narrow roof is glazed also, and forms a short span-roof, one-half of which is made to open upwards. To bind the front lights to the wall and the front glass, there are, at certain distances, some flat iron bars, through which holes are made to admit a long rod, to which rod there are attached cranks, worked by vertical and horizontal wheels. These are attached again to an upright, strong, iron rod, about four feet from the ground, where there is another horizontal wheel, and a kind of barrel with ribs, which fit into the teeth of the wheel. When air is given, by means of a windlass the ribs of this barrel hold the wheel fast in its place, and thus no ordinary wind can move the opened lights. This is the house I alluded to as having the front lights fixed, air being given under them; but Mr. Ewing says, the top sashes, when open, cool the house quite enough, because the heavy atmospheric air is pressed down through the openings. The whole of this is made of glass and iron, and cost about £400. Standing at one end, and looking through this long avenue, as it were, of Peach-trees, this house has a surprisingly good appearance.

There is, also, a greenhouse in the same garden, formed on every side with upright glass, and a ridge-and-furrow roof. In this house I noticed numerous good specimens of the usual greenhouse plants, such as *Aphelaxis*, *Boronia*, *Eriostemon*, *Polygalas*, and other New Holland shrubs. In a pit I saw some well-formed *Heaths*, which had been planted out in a bed of beath-mould in the same pit for three years, and had, in consequence, formed themselves into dense bushes, without the tedious process of tying-out, as practised by the metropolitan exhibitors. They were taken up with balls, and potted during this last summer, and certainly had a healthy, dark green appearance when I saw them.

The Vineries here have been planted about three or four years, and the Vines are remarkably strong and promising. The borders are protected in a most capital manner, being regularly thatched with straw—that is, a frame-work is formed leaning upon the front of the house, and resting upon a foundation close to the walk. This frame-work is then well thatched, and the border, consequently, is rendered much more dry than if the straw had been in actual contact with the soil. When I was there the ends were open, but when forcing commences, I understood these would be closed. I should think the distance from the thatch to the soil of the border next the house is about two feet. I suggested that Mushrooms might be grown under this thatch, and was informed that spawn had been put in for that purpose.

Speaking of Mushrooms reminds me, that in the Mushroom-house I observed what I took for a new vegetable, but soon found out it was nothing else but *Turnip tops*, blanched. I was assured they were very delicate eating, much more so than Sea-kale itself. This is worthy of general imitation.

Badorgan is situated close to a creek of the sea; and in the pleasure-grounds I was much gratified to find that fine tree, the *Araucaria imbricata*, is not at all affected by the sea breezes. I saw about fifty of them, averaging from eighteen to twenty feet high, well formed, dark green, healthy, thriving trees.

In the woods and plantations the *Rhododendrons* thrive well, and there are some very fine specimens of the best hybrid varieties.

Silver Firs are the predominating evergreen forest trees, and, like the *Araucaria*, seem to brave the sea breeze with impunity.

I could fill another sheet with notes on this place, but, as I have already exceeded the usual space allotted to me, I must conclude by saying that I was much gratified, and, I will add, instructed in many points, by my visit. In summer the place must be beautiful; and, if I am spared, I will visit it at that season, and give a further report of the progress of the trees on these Glass Walls. I must, however, just notice that Mr. Ewing has invented a new kind of hot-water pipes, for which, if they answer his expectations, he intends to take out a patent. That fact, of course, prevents me saying another word about them, only this—I think they are very likely to supersede any now in use.

T. APPLEBY.

THE MANAGEMENT OF LONG-WOOLLED EWES AND LAMBS.

HAVING, in several former papers, gone into the management of Down and other short-woolled sheep, it is now my intention to treat chiefly of the long-woolled breeds, such as the Cotswolds, Lincolns, Teeswaters, &c., although the same observations will apply equally well to other varieties, that is the Leicesters, Kents, Devons, and the crosses. I propose to consider the best mode of management for Ewes and Lambs of these breeds when kept in pasture districts, or upon farms containing a small portion of arable and pasture land in connection.

I have noticed, in nearly every county, that there are circumstances, in connection with soil and situation, which render a variation in the treatment of stock necessary, yet there are general rules which may be said to apply in almost all cases where the breeds of sheep are nearly allied. In treating this subject, I think my object will be best attained by alluding to it under two separate heads—first, the method to be pursued in rearing fat Lambs; and, secondly, that required for the rearing of stock Lambs for grazing at a future period. The first part of our subject is, certainly, a matter of great importance, and one upon which will, in a great measure, depend the profitable consumption of grass and other green food. I also intend to speak of stock kept upon farms consisting entirely, or in greater part, of pasture land. The first object in raising fat Lambs should be to select that breed or cross which will make the greatest weight of meat in the least time, of that quality most in esteem by the purveyor and consumer. I shall first observe, that although many advocate the pure breeds of Leicesters, Cotswolds, and others, for rearing fat Lambs, yet the far greater number of graziers prefer a cross either of the South Down or Horned Dorset, these being both short-woolled breeds. This cross exercises a beneficial influence upon the wool, and general appearance of the Lamb; and in case of twin Lambs this is especially desirable, because they generally require three weeks or a month extra keeping, during which period the pure long-woolled breeds become hollow in the coat, thereby depreciated in value as fat Lambs in the live market; at the same time, it will be found that the quality of meat to the consumer will be improved in nearly the same proportion as the

general appearance is by the close wool. The cross of short-woolled sheep being advantageous in this case, it is best to decide which breed should have the preference. I think it must be admitted that the Horned Dorset is the best cross of the two, for I find that the produce in Lambs will be greater than it will from the Down cross; and although there is no greater propensity to fatten at an early age in the produce of the former, yet it is equally so, and the greatly increased growth, as compared with the latter, makes the former the more profitable. I can safely say, that I have often seen the most perfect fat Lambs that it is possible to rear from the Long-woolled Ewes when they have been put to the Horned Dorset Rams. Many persons, inexperienced in the result of such a cross, may fancy that the Lambs would come horned like the sire, but it is a fact, that ninety-nine out of every hundred will come polled Lambs. I mention this, because it is well known that horned Lambs are not appreciated in the live markets.

The Tup may be turned with the Ewes during the month of September upon farms consisting partly of arable, such land being generally tilled to produce root-crops for feeding Ewes and Lambs before the pastures are ready; but upon pasture farms the month of October will be soon enough; for it is not desirable, in this case, for the Lambs to come long before the grass is ready for feeding.

The mode of keeping the Ewes during pregnancy must now be considered; and upon farms containing some arable land, where roots are cultivated, they may be made use of for feeding the Ewes, in connection with hay, during the winter months; but, at all times, care should be taken not to resort to root-feeding until all the grass is consumed, and this may be made available for a considerable time, when the aftermath is allowed to accumulate and kept in reserve. The best roots are Cabbages; but failing these, the Swedish Turnips are better than any variety of common Turnips.

Again, upon a purely pasture district, the Ewes, not having the advantage of a root-crop, must be kept entirely upon grass or hay; and by carefully preserving grass in the pastures, such as may have arisen after the month of August upon any dry soil, this grass, when held in reserve for the winter, will furnish the best possible food for in-Lamb Ewes. The lambing-time for this description of stock is not usually attended with so much risk as those breeds which Lamb at an earlier season; and it is quite sufficient, where the farms are sheltered, to keep a shifting-fold on the driest pasture, and if screened from the north by fences it will then not be necessary to resort to the use of a shed and fold yard. It will, however, be quite requisite that great care and attention should be paid to this breed of Ewes at the lambing-time; for although much of the risk consequent upon bad weather will be avoided, yet the ordinary casualties which occur will demand the utmost vigilance of the shepherd by night and by day. The method of treating the Lambs whilst young, including castrating, &c., has been treated in detail in a former paper upon the management of Down Lambs for fattening.

From this period, the Lambs with the Ewes will be able to go into the pastures for grass-feeding, and this part of the season may be considered the most important of any, for it often happens that the season is backward, or the farms cold and exposed. In either case, the Lambs will be ready for the grass before it is sufficiently advanced in growth to afford them sufficient sustenance without the additional aid of roots, or artificial feeding. I, therefore, recommend that upon every farm possessing arable land Mangold should be grown, and held in reserve for the stock at this critical period of the year; for in case the Lambs receive a check from insufficiency of food whilst young, they never recover it so far as to make first-rate fat Lambs. The Mangold, in this case, should be cut and placed in troughs for the Lambs in advance of the Ewes, as also oil-cake or corn until the grass is become abundant; but the Ewes may receive their Mangold strewed over the grass land every day, and the grass should be partitioned off in folds until the fields are covered with a sufficiency to admit of being (what is called) stocked for the summer. Upon those soils which are rich enough to fatten Sheep by the aid of its own produce alone, it is customary to reckon how many Ewes and Lambs may be fattened upon an acre, and turn in the number required, there to remain until the Lambs are fit for the market. On these soils they are often kept in connection with bullocks; the land being stocked, according to its capability, with both beasts and sheep; and from the quiet habit of the long-woolled breeds they are found to do well when pastured with bullocks. On the contrary, the Down breed of Sheep is not found to answer well on stocking pastures upon this plan, either by themselves, or in connection with bullocks; for being of a roving habit, they trace the fields backwards and forwards, rendering the food quite distasteful to the cattle as well as themselves. Hence, the almost universal practice, where Down Sheep are kept, of giving their daily allowance of food by advancing the hurdles on to fresh ground.

I have noticed the promiscuous mode of feeding upon grass land adopted where the produce has been quite insufficient to fatten the animals, and, in consequence, I advise, that wherever the grass produce is not of rich quality, the stock should be continually advanced, by receiving, in addition to their daily portion of grass, a supply of roots, or artificial food, which will not only make good any deficiency in the feeding properties of the grass, but will greatly improve the value of the produce in future seasons. Under the foregoing method of management the Lambs will be fit for the market at from twelve to fourteen weeks old, at which time the Ewes, also, will be forward in condition; many, perhaps, fat enough to sell at the time the Lamb is sent to market; but in this sort of Sheep the wool is valuable from its quantity, particularly when kept upon the strongest soils—it is, therefore, desirable to make it a rule never to sell the Ewes until they have been fleeced, and there is no breed of Sheep which look so well out of their wool as the Long-woolled and their crosses, and realise in proportion a greater price in consequence.

This kind of stock ought always to be sold off fat before Michaelmas, because the grass loses its fattening property after that time; therefore, the most backward Ewes, or those which may have reared twin Lambs, should be forwarded by corn or cake feeding.

R. BLUNDELL.

(To be continued.)

THE MAIN CHANCE.

(Concluded from page 267.)

By the Authoress of "My Flowers."

"FREDERICK JONES' voyage had been very prosperous, but his troubles on landing were overwhelming: the expences of moving his goods and chattels from shipboard were frightful; and the difficulty of obtaining shelter almost incredible. There was an evident attempt to put the best face upon things; but it was at the same time so clear that he would have given anything to be able at once to return, that the struggle to brave out the undertaking would have been amusing had it not been so painful. He had received one or two offers of employment, but he could not decide whether at once to advance to the diggings, or to engage in his own trade.

"The scenes of reckless intemperance and outrageous wickedness, evidently had shocked his mind, while the loss of his domestic comforts, and the gentle attentions of an excellent and devoted mother, were clearly much felt. He wrote, "Tell my little brother John not to think of coming here until I send for him;" and he quaintly added, "that will be many a long day first." He hoped, he said, in a few years, to save enough money to enable him to return with a realization of an independence. This, he admitted, was the aim of almost the whole of the population; no one seemed to have made up his mind to be a permanent inhabitant; alas! how few of those who are sanguine enough to entertain such a notion will ever realize their anticipations!

"Months again rolled on, and the arrival of every Australian mail was eagerly looked for by the friends of Frederick Jones, in the hope of its bringing further intelligence from the absentee; nor were they disappointed, for early one morning a letter in his well-known handwriting was given to the father, and was read with eagerness aloud to the whole family. Frederick was working about sixteen miles from Melbourne, on the road to the diggings, where he was receiving ample wages, which probably might have enabled him to lay aside a weekly sum towards the fund to enable him to return home, had not the expence of food and raiment been exorbitant, and lodging fearfully high. He had, too, been unwell, and unable for some time to work at all, but was now much improved in health; and he had been obliged to walk sixteen miles to post his letter, and to return the same evening, making, as he said, "a tolerable walk" for such a purpose. These were still more decided symptoms of regret at having left England, and a strong recommendation to all to pause before they decide upon emigrating. The climate, he said, evidently did not suit a large proportion of the emigrants; and fevers and dysentery were frequent.

"About the same time of the same day another letter was received in the town, brought by the mail from South Australia, and directed to the parents of the young man who accompanied Frederick Jones. The date of this letter was about three weeks later than the former, and sad, indeed, was the intelligence it brought! The writer, who had opened a small store, was suddenly summoned to attend the sick-bed of his friend, whom he found prostrated with typhus fever, insensible to all around him, and evidently in great danger. The doctor said the case was not without hope, but everything depended upon careful and judicious nursing. No tender mother was at hand to minister to his wants; and the young friend alone undertook its arduous duties. For three days and nights he never left Frederick's bedside, and had to undergo, alone, all the overwhelming anxieties of watching over him. Sometimes, in the paroxysms of delirium, poor Frederick would throw himself from the

bed, and it required all his companion's corporal strength to restrain him from doing injury to both. Not one coherent word escaped his lips; and the only indication he had of his being at any time sensible, was when he folded his hands, as if in prayer, and a slight movement of the lips strengthened the hope that he was so engaged; and thus his soul passed away to stand before the throne of Christ.

"So ended the career of our poor favorite! Carressed and beloved at home, he died in a foreign land, with no ministerial attendance, nor in possession of the ordinary comforts of the poorest man in his native country. And for what was this sacrifice made? For the vain and delusive hope of heaping up earthly treasures, "that moth and the rust corrupt, and that thieves break through and steal!"

"Poor Jones was buried by his only friend at the least possible cost; but, nevertheless, the doctor's and undertaker's bills, and other incidental expenses, left about £25 to be made up in the best way that might be: a sale of his few effects produced a part of the sum, and his friend made up the deficiency.

"How great the shock was to his parents I need not describe. To hear of his health and death in the same day was a blow that few could bear with calmness: and the Jones's were no exception to the generality. I may just add, that the friend's letter was a very desponding one, weighed down as he was by the death of Jones. He had made up his mind to return with all possible expedition, for he stated, that although more money might be made often than in England, yet everything was so expensive, and sickness so prevalent, that no saving could be effected."

Dear readers! the history of Frederick Jones is a very striking, and a very awful one. He was wishing to be rich. The love of money, and not the command of the Lord, sent him forth, from parents, home, and quiet business. When we go into places where there is no fear of God, no means of grace, and no word from the Lord to point out our way; there, depend upon it, we take no blessing with us, and put ourselves in the way of such temptations and troubles as must end in bodily and spiritual harm. The Romans, in ages long gone by, had what they called an oracle, which they took no step without solemnly consulting. *We* have an oracle; let us consult it in all our doings. *Our* oracle is not one of flesh and blood, hidden in some mysterious place, like that of the poor benighted Romans: but it is the Word of the living God! What says it to those who are seeking their worldly good? "Godliness with contentment is great gain." "And having food and raiment, let us be therewith content. But they that will be rich fall into temptation and a snare, and into many foolish and hurtful lusts that drown men in destruction and perdition. For the love of money is the root of all evil; which, while some coveted after, they have erred from the faith, and pierced themselves through with many sorrows." "Seek ye *first* the kingdom of God and his righteousness, and all these things shall be added unto you." Oh! that we would lay these things to heart! That we would *pray* more for our daily bread, and not go seeking it in the waste places of the earth! I have never yet heard of a man who feared God going to the gold-regions; he dares not.

Let us reflect how dreadful it must be to lie on a sick bed in a strange and heathen land; to feel that time, health, blessings, life itself, have all been wasted and misused! that the Great Account is at hand! What a main chance this is to toil and struggle for! Depend upon it, readers, "the kingdom of His righteousness" is the only real and certain main chance. Let us dig in the Lord's gold-fields.

ALLOTMENT FARMING—FEBRUARY.

AFTER one of the most severe winters on record, more keen, indeed, than the notorious hard frost of 1814, which those of our cottage friends who possess a bleached crown will remember, we are at last placed on the threshold of a rising spring; hard weather there still may be, but it is at least a consolation to remember that we have got rid of a dull, dark December, and such a January as will be long remembered.

But there are no new things in this world. Since time began, the history of the human race is altogether a chain

of varied character, link after link produce shades of difference, and yet, when the whole chain is viewed, cycles, or groups of events, or conditions, present themselves to the mind as coming round again at intervals. Indeed, if it were not so, how could the great balance be restored? If we have a repetition of cold summers, how shall their chilling effects be counter-checked but by some possessing an unusual degree of heat? If we have, like the starving and sloppy years of 1816-17, too much wet, do we not generally find that nature, in a compensatory way, sends certain periods of drought, perhaps combined with much heat, and which just serve to restore the balance.

Therefore, our cottage garden friends and those who deal with the allotment system, which one day will receive a far broader development, take heart; although your Cabbageworts, Lettuces, &c., have quailed beneath the stern dominion of the ice king of 1854, yet take courage through the fact, that the sun will shine not a whit the less when spring arrives; and, with April showers combined, will again give rise to the same lightness of heart and heel as came to pass in the days of our forefathers.

Whilst writing this, I must remark that the past severe weather has been one of no small trial to the lowly. Everything on the rise but fires with the poor; an unusually hard period as to weather; Potatoes only in the hands of the affluent or the grasping; even such root-crops as Swedes, Carrots, Parsnips, Beet, &c., partaking of the general tone of trade; the whole, of course, biased in the main by the price of Wheat; then, I say, this, with more, had I space for further observation, will prove, to all feeling minds, that much privation, if not suffering, has been endured. But how plain the endurance of these things proves that John Bull, although a notorious grumbler, is by no means a revolutionist.

It shows the endurance of the masses, and points, in unmistakable language, to that under current of feeling which evinces the secret faith they have in the solidity of our free government. The character of the pending war, too, will set forth the character of our time-honoured institutions in a bolder light than ever; the desperate character of some of our semi-barbarous nations will surely teach our countrymen a lesson they will not speedily forget.

But to our allotment matters. If any of our readers have been what is termed frozen out, they have surely had an excellent chance of attending to drainage affairs, manuring, hedge or boundary dressing, &c., and of clearing and collecting the residue of everything that has once been alive, in order to increase the manure heap. There will be, doubtless, plenty of *soot* this spring, for much firing must of necessity have been used.

I have always strenuously advocated carefulness over this valuable stimulant, and still think that the most profitable and economic way of using it is combined with good Peruvian guano, and the remains of very old wood stacks, old manure become a soil, &c., and which our chemists have dignified by the title of humus. This may be prepared before hand, and kept out of the reach of others for use in drills or on beds. It must be remembered, however, that this is a precious material, and not by any means for "digging-in" as ordinary manure. Its chief use is as a promoter of rapid growth in young seed crops, making them to grow rapidly out of the reach of insect enemies, slugs, &c., and also to steal a march on the summer.

Many crops may be obtained from ground not too much exhausted by the use of this alone; the *Early Horn Carrot* I have grown capitally, by the use of such a material, in beds of about four feet in width, such beds having been a high ridge all the winter, and broken down and well worked in the beginning of February; the compost applied about an inch or more in thickness, and "trickled-in" with a fork to about four inches in depth. The seed then sown and covered with the ordinary soil an inch in thickness. Such beds, for early work, should be thrown six inches above the ordinary ground level, in order to promote a mellowness in the soil, as stagnation through a low level is one of the greatest enemies of early crops.

The nicest attention must be paid, during this month, to a due preparation of the soil for spring sowings; whether the ground has been ridged and worked in autumn or not, it must by no means be handled when wet. Neither must

the operator think of digging whilst snow is on the ground; this is a most improper procedure, and enough in itself to cause the failure of a crop. It is scarcely too much to affirm that one-half the success of any crop is dependent on the manner in which the soil is prepared in spring. Ground of an adhesive character, and which has not been worked in autumn, should be twice worked, and it will be well to ridge it with deep digging for a month, the operator making up his mind to crop it rather later, which will, indeed, be a matter of necessity.

Most of the spring sowings will, of course, occur in the early part of March, but there are a few things which are better done at the close of February, if the soil is in a friable condition. *Parsnips*, for instance, require a long summer, if they are expected to be fine. Those who grow the *Early Horn Carrot*, too, under high and attentive culture, as we have often recommended in our allotment paper, in order to bunch and sell them in May, when they fetch a high price, must (as before observed) get in the seed about the very end of January, and attend them as early *Radishes*; indeed, the two latter may be sown in alternate drills, at three inches apart, and receive the same attention, which, indeed, they require, and the *Radishes* being sold off in the end of March, the *Carrots* will thenceforth have it all their own way; they will then be in drills of six inches distance, and may stand close together in the drills.

It is astonishing how many bunches of *Carrots* may be drawn off a moderate-sized bed by such good and high culture; that is to say, with a high interest and feeling in the affair. Of course, those who require good, full crops of summer *Peas*, and *Broad Beans*, will take care to sow full crops during this month; a row or two in the first week, and the same repeated in the last week, will produce as many *Peas* and *Beans* as the cottage or allotment man has room for in his small plot.

The best *Pea* is the *Bedman's Imperial*; the best *Bean*, I think, *Johnson's Wonderful*, or the old *Broad Windsor*, if the soil is strong.

R. ERRINGTON.

APIARIAN'S CALENDAR.—FEBRUARY.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

THOSE persons who have brought their stocks thus far in health may congratulate themselves, and may also be congratulated, for I am quite aware of the difficulty, the expence, and the trouble; but how mortifying it would be to have an abundant honey season, and no bees to collect it.

FLOOR-BOARDS.—Particular attention must be given at this season in endeavouring to keep the interior of the hives free from damp, which a frequent changing of the floor-boards will tend very much to effect; indeed, after so long a confinement as the late frost has occasioned, it becomes necessary, or the health of the stocks will be much endangered.

FEEDING.—Food must be liberally supplied, but in so doing much attention must be paid to neatness and cleanliness in its administration, for where syrup is used, the greatest care must be given that it be not smeared about the hives and floor-boards, for it will not only cause dampness in the hives, but induce fighting amongst the bees when they are able to fly abroad.

HIVES OF COMB.—Let the hives of comb in which swarms of the last year have died be carefully preserved for the purpose of putting swarms of the coming season into them. The best method of keeping such hives will be, after having cleared them of the dead bees, to hang them up in a dry place, out of the reach of mice or rats. The advantage which a swarm put into a hive of clean, dry comb has over one that is put into an empty hive is very great indeed, and known only to those persons who have experienced it.

HARDY BORDER PLANTS.

(Continued from page 291.)

ACONTIUM CAMMARUM.

THE BEAKED WOLFSEAR OR MONKSHOOD.

THIS a fine, tall, spiry-formed, compact-growing plant, is often called *A. rostratum*, even in books. Its roots are tuberous, supported by a large amount of massy fibres, which should not be disturbed at the border-dressing times. Should no increase be needed, these plants may remain undisturbed for many years in the same spots. It flourishes in any good, common garden soil. The whole plant is of a dark green colour. Its stems rise from four to even six feet in height, according to the soil and situation it is growing in. Its leaves are cut somewhat like fingers of the human hand. The whole plant is smooth; the flowers are purple, large, numerous, and panicked; the extreme or main spikes being very long. It is a very showy, desirable, hardy, strong-growing plant; a native of Switzerland, and was introduced to this country in 1752; flowering from the end of June to the end of August. It should be planted in back, or centre rows, either in the beds, borders, or plantations, where it is very useful, for it even does well in situations where it is much shaded by trees, and a little drip from them does not hurt it.

T. W.

POULTRY SHOWS.

SHROPSHIRE.—This was held on the 8th of December, in a building erected specially for the purpose, in the Smith-field, Shrewsbury. For the following report we are indebted to *Eddowes's Shrewsbury Journal* :—

"The Poultry deservedly attracted very considerable attention, particularly among the fair sex, and this department has proved a very pleasing addendum to the exhibitions of stock. In the class of *Spanish fowl*, those of Mr. S. D. Smith and R. D. Newill, Esq., which took the first and second prizes, were considered as very good specimens, but the whole class were scarcely up to par. In the chickens, those of the Rev. S. Donne and Mr. Amphlet, which were awarded prizes, may be considered to have deservedly taken the palm. Of *Coloured Dorking fowl* there were sixteen pens of very fine birds, the prizes being taken by Lord Berwick with the same fowls as were at the Coalbrookdale Show. Four of the pens also drew forth honorary mention from the judges. There were also eighteen pens of chickens of this year, the whole of which were highly meritorious, and some of the pens it were almost impossible to excel. The mere fact of those of Viscount Hill and Mrs. Lloyd, Oswestry, having taken the prizes among such competitors, speaks so highly in their favour that it is unnecessary for us to add another word. Those of the Rev. R. Corbett, of Harnage, were too old to compete in the class of chickens, and consequently disqualified, though really first-class birds. Both classes of *Dorkings* were pronounced by able judges to be such a collection as has seldom been seen at any exhibition. Passing on to *White Dorkings*, though the class was not very large, the prize birds deservedly won their laurels. We next come to the *Cochin-China*. There were six pens of *Cinnamon* and *Buff fowl*, out of which the first prize was taken by Mr. Cattell, with the same birds as have won the prizes at the principal exhibitions in the kingdom. Of chickens there were thirty-one pens of very superior birds entered, more particularly those of the Rev. S. Donne and Lord Berwick, which took the prizes. There were nine entries for *Brown* and *Partridge-feathered Cochin-China* chickens, among which were some excellent specimens, particularly those which took the prizes. Mrs. Williams, of Eaton Mascott, carried away the first prize for *Black Cochin-China* chickens with the same birds as were so successful at Coalbrookdale. Mrs. Stowe, of Tewkesbury, also exhibited some fine specimens in this class. Mr. W. Lort took all the prizes awarded for *Malays*, but the judges did not consider there was sufficient merit in the class of fowl to award the first prize. In *Black-breasted* and other *Red Game fowl* Mr. E. Eggington, of Ludlow, and Mr. R. Roden, of Marsh Brook, were the successful competitors against some very fine birds. A whole class of *Poland fowl* was disqualified on

account of the top-knots being trimmed for exhibition, a practice the judges had more than once to deprecate. A pen of Silver *Poland fowl* of Mr. E. W. Hazlewood, of Bridgeorth, were splendid birds. The Rev. G. C. Guise took the first, and Mrs. H. Williams the second prize for *Black Bantams* against three other dangerous competitors. The whole class of *Geese* was noticed by the judges as meritorious, and a very fine pen could not compete, owing to their not being entered in time. Those of Mr. Meredith, which carried the palm of the day, were very fine, the gander and two geese weighing 62 lbs. beating any competitors by two or three pounds. Of White Aylesbury *Ducks* there were eleven pens entered, which formed a very attractive group for their excellence; Mrs. Stowe, of Bredon, taking the first, and Mr. T. Jobson the second prize. The first prize for Rouen ducks was given to Mr. J. B. Chune, he, however, having no competitor. In the class for ducks of any other variety there were ten entries, the first prize being awarded to a pen of beautiful Labrador or Buenos Ayres. The *Turkeys*, of which there were four pens entered, were really excellent, those of Miss Meire and Viscount Hill being extraordinary specimens. There were ten pens of turkey poults entered, among which there were some very fine specimens, particularly the prize birds. The class of *Pigeons* was very well represented by all varieties in first condition. Among the extra exhibitions we noticed a remarkable pen, belonging to Mr. S. Jukes, of Shrewsbury, containing an imported hen of the Cochinchina breed, with thirteen very fine chickens three months old."

[In the following list *fowl* refers to birds exceeding one-year-old, and *chickens* means those of 1853. Each pen consists of a male and two female birds, and the first prize in each case is £2 2s., and the second £1 1s. unless otherwise specified.]

SPANISH.—*Fowl*.—First prize, Mr. S. D. Smith, Madeley. Second prize, Mr. R. D. Newill, Adamston. *Chickens*.—First prize, Rev. S. Donne, Oswestry. Second prize, Mr. J. Amplett, Walsall.

DORKING (Coloured).—*Fowl*.—First prize, Right Hon. Lord Berwick. Second prize, Right Hon. Lord Berwick. *Chickens*.—First prize, Right Hon. Viscount Hill. Second prize, Mr. David Lloyd, Oswestry. (The whole class highly meritorious.)

DORKING (White).—*Fowl*.—First prize, Hon. Mrs. Kenyon, Pradoc. Second prize, Mr. H. Foster, Dunstable, Beds. *Chickens*.—First prize, Hon. Mrs. Kenyon. (Second prize withheld.)

COCHIN-CHINA (Cinnamon and Buff).—*Fowl*.—First prize, Mr. J. Cattell, Birmingham. Second prize, Hon. and Rev. H. N. Hill, Berrington. *Chickens*.—First prize, Rev. S. Donne, Oswestry. Second prize, Right Hon. Lord Berwick.

COCHIN-CHINA (Brown and Partridge-feathered).—*Fowl*.—First prize, withheld. Second prize, Mr. H. C. Simpson, College Hill, Shrewsbury. *Chickens*.—First prize, Mr. P. Cartwright, Oswestry. Second prize, Mr. J. Massey, Wem, Salop.

COCHIN-CHINA (Cinnamon and Buff, or Brown).—*Chickens*.—First prize, Mr. James Cattell, Birmingham. Second prize, Mr. T. F. Palmer, Shrewsbury.

COCHIN-CHINA (White).—*Chickens*.—First prize, Mr. W. Lort, Great Heath, Herefordshire. Second prize, the Rev. S. Donne, Oswestry.

COCHIN-CHINA (Black).—*Chickens*.—First prize, Mrs. H. Williams, Eaton Mascott, Salop. Second prize, Mrs. L. C. Stowe, Bredon, Worcestershire.

MALAY.—*Fowl*.—First prize withheld. Second prize, Mr. W. Lort, Great Heath, Herefordshire. *Chickens*.—First prize, Mr. W. Lort, Great Heath, Herefordshire. Second prize, Mr. W. Lort.

GAME FOWL (White and Piles).—*Fowl*.—First prize, Mr. C. Peplow, Wellington. (Second prize withheld.)

GAME FOWL (Black-breasted and other Reds).—*Fowl*.—First prize, Mr. E. Eggington, Ludlow. (Second prize withheld.) *Chickens*.—First prize, Mr. E. Eggington, Ludlow. Second prize, Mr. R. Roden, Marsh Brook.

GAME FOWL (Black and Brassy-winged, except Greys).—*Fowl*.—First prize, Mr. N. N. Dyer, Bredon, Worcestershire. *Chickens*.—First prize, Mr. N. N. Dyer, Bredon, Worcestershire.

GAME FOWL (Duckwings and other Greys and Blue).—*Fowl*.—First prize, Mr. T. Dickin, Ellerdine, Salop. *Chickens*.—First prize, withheld. Second prize, Mr. R. Roden, Marsh Brook.

GOLDEN-FENCILLED HAMBURGH.—*Chickens*.—First prize, Mr. J. Dain, Henley-in-Arden. Second prize, Mr. J. B. Chune, Coalbrookdale.

GOLDEN-SPANGLED HAMBURGH.—*Chickens*.—First prize, Mr. G. Jukes, Beslow, Salop. Second prize, E. Peplow, Wellington.

SILVER-FENCILLED HAMBURGH.—*Fowl*.—First prize, Mr. J. Dain, Henley-in-Arden. Second prize, Mr. E. Gough, Gravel Hill. *Chickens*.—First prize, Mr. J. B. Chune, Coalbrookdale. Second prize, Mr. J. Massey, Wem.

SILVER-SPANGLED HAMBURGH.—*Fowl*.—First prize, Mr. W. Homer, Kingsland. Second prize, Mrs. Corbet, Sundorne. *Chickens*.—First prize, Mrs. S. Acton, Acton Scott. Second prize, Mr. W. Homer, Kingsland.

POLAND FOWL (Black, with White Crests).—*Fowl*.—Class disqualified, the top-knots being trimmed, and the judges strongly deprecating this practice. *Chickens*.—First prize, Mr. J. Amplett, Walsall. Second prize, Mr. J. Child, Balsall Heath.

POLAND FOWL (Golden).—*Fowl*.—First prize withheld. Second prize, no entry. *Chickens*.—First prize, Mr. S. D. Smith, Madeley.

POLAND FOWL (Silver).—*Fowl*.—First prize, Mr. E. W. Hazlewood, Bridgnorth. Second prize, no entry. *Chickens*.—First and second prizes, no entry.

FOWLS OF ANY OTHER BREED.—(Rumpless).—First prize, Mr. T. Taylor, Burligh Villa. (Blue Poland).—First prize, Mr. E. W. Hazlewood, Bridgnorth.

BANTAMS (Gold-laced).—*Fowl*.—First prize, Mr. U. Spary, Markgate-street, Beds. Second prize, J. A. Lloyd, Leaton Knolls, Salop.

BANTAMS (Silver-laced).—*Fowl*.—First prize, Mr. U. Spary, Markgate-street, Beds. Second prize, Mrs. Corbet, Sundorne.

BANTAMS (Black).—*Fowl*.—First prize, Rev. G. C. Guise, Pulverbatch. Second prize, Mrs. H. Williams, Eaton Mascott.

GESE.—First prize, Mr. Meredith, Frodesley, Salop. Second prize, Miss Ellesmere, Boreton, Salop. (Whole class meritorious.)

DUCKS (White Aylesbury).—First prize, Mrs. Lydia C. Stow, Bredon. Second prize, Thomas Jobson, The Bank, Salop.

DUCKS (Rouen).—First prize, Mr. J. B. Chune, Coalbrookdale.

DUCKS (Any other variety).—First prize, Mr. T. L. Meire, Cound Harbour, Salop. Second prize, Mr. T. L. Meire.

TURKEYS.—Exceeding one-year-old.—First prize, Miss Meire, Berrington, Salop. Second prize, the Hon. Viscount Hill. Birds of 1853.—First prize, the Hon. Viscount Hill. Second prize, Miss Meire, Berrington, Salop.

GUINEA FOWL.—First prize, Mr. T. L. Meire, Cound Harbour, Salop.

TORQUAY.—This Exhibition opened on the 11th, and a more magnificent spectacle in the Poultry line has certainly never been witnessed in the West of England. Nearly three hundred pens were filled with a due proportion of all the leading varieties of Fowls, Turkeys, Ducks, Geese, and Pigeons, in forty classes. The spacious room was tastefully fitted throughout with decorations kindly furnished by Mr. Webb, of the Royal Hotel, and choice plants and evergreens from Morgan's Horticultural establishment, and the arrangements throughout reflect the greatest credit upon the untiring exertions of the Honorary Secretary and Committee. The office of Judge was undertaken by Mr. Edward Hewett, of Birmingham, and when we say, that during the past season he has been selected for the same onerous duty at many of the leading shows in England—at some, as sole adjudicator, at others, associated with the first judges in the kingdom—we need not say anything further with regard to the justice of his decisions. We, however, sometimes find that even justice is not palatable to the prizeless exhibitor, but we are the more pleased to find that the decisions have not merely demanded satisfaction, but obtained it. We have his authority for stating that the classes generally were such as would do credit to any exhibition, especially the Buff Shanghae, Spanish, Dorkings, Game, Hamburgs, Turkeys, and Ducks.

We hope that next year the Committee will correct the manifest injustice and bad policy of giving prizes of less value to the Geese than others. The arrangements for the exhibition-room were certainly the best yet seen at a local show; and the superior quality of some classes were manifest on the most careless inspection. It will be seen, that Mr. Channing, of Heavitree, Exeter, again felt disposed to enter the lists against his formidable antagonist, Captain Snell, relying, this time (though so recently defeated at Honiton) on the entry of several fresh pens of birds; the result is identical with the former decision, Captain Snell taking precedence with the same fowls as before; the second prize to the formerly selected ones of Mr. Channing. The American bronze-winged Turkeys still proved how wonderfully deceptive, in appearance, to their rivals, they are if brought to scale, as being so exceedingly close-feathered, they weighed seven or eight pounds more than any others.

We are sorry to have to add, that a trustworthy correspondent writes thus:—"I must complain of the thorough want of carefulness displayed in the railway officials in tossing about baskets of fancy poultry at the stations; for, travelling as I have lately so much by rail, my feelings have been shocked at their utter heartlessness in this matter; and when remonstrance is attempted, it is no unusual thing to hear, 'they are only a lot of fowls.'"

Class I.—SPANISH.—Cock and two Hens.—First prize, Mr. John Marshall, Belmont, Taunton. Second prize, Miss Lydia C. Stowe,

Brendon, near Tewkesbury. Third prize, Mr. Wm. Wevill Rowe, Milton Abbot, Devon.

Class 2.—**DORKING (Coloured).**—First prize, Mr. John F. Pearce, Lower Slepton, Whimple. Second prize, Mrs. Brunel, Watcombe, Torquay. Third prize, Mr. John R. Rodbard, Alnwick Court, Wrington, near Bristol.

Class 3.—**DORKING (White).**—First prize, Mr. Chas. Edwards, Brislington, near Bristol. Second prize, Mr. Robt. Rowe, Torquay. Third prize, Miss Ann Wilcox, Nailsea Court, near Bristol.

Class 4.—**SHANGHAE (Cinnamon and Buff).**—First prize, Capt. W. H. Snell, St. Swithin's Lane, London. Second prize, Mr. W. L. Channing, Heavitree, Exeter. Third prize, Mr. Cyrus Clarke, Street, near Glastonbury.

Class 5.—**SHANGHAE (Brown and Partridge).**—First prize, Rev. Grenville F. Hodson, Banwell, Somerset. Second prize, Mr. John Rodbard, Alnwick Court, Wrington, near Bristol. Third prize, Miss Lydia C. Stowe, Brendon, near Tewkesbury.

Class 6.—**SHANGHAE (White).**—First prize, Mr. Cyrus Clarke, Street, near Glastonbury. Second prize, Miss Lydia C. Stowe, Brendon, near Tewkesbury. Third prize, Mr. F. J. Coleridge, Ottery St. Mary.

Class 7.—**MALAY.**—First prize, Mr. Charles Ballance, 5, Mount Terrace, Taunton. Second prize, Mr. Charles Ballance, ditto. Third prize, Mr. Henry Adney, Lymstone, Devon.

Class 8.—**GAME FOWLS.**—First prize, Mr. J. F. Mortimer, Mill-street, Plymouth. Second prize, Chas. Edwards, Brislington, near Bristol. Third prize, J. R. Rodbard, Alnwick Court, Wrington, near Bristol.

Class 9.—**GOLDEN-PENELOPE.**—First prize, Mr. Edward Vivian, Woodfield, Torquay. Second prize, Mr. J. Creed, Kingskerswell.

Class 10.—**GOLDEN-SPANGLED HAMBURGH.**—First prize, Miss Kate Paige, Torquay. Second prize, Mr. Wm. Kennaway Spragge, The Quarry, Paignton. Third prize, Mr. Wm. Kennaway Spragge, ditto.

Class 11.—**SILVER-PENCILLED HAMBURGH.**—First prize, Rev. St. Vincent L. Hammick, Milton Abbot. Second prize, Mr. T. Michellmore, jun., Berry, Totnes. Third prize, Mr. E. Vivian, Woodfield, Torquay. (This class was of unusual merit.)

Class 12.—**SILVER-SPANGLED HAMBURGH.**—First prize, Mr. J. B. Toogood, Higher Terrace, Torquay. Second prize, Mr. Frank Paige, Torquay. Third prize, Mr. A. Paul, Adwell Lodge, Torquay.

Class 13.—**POLAND (Black with White Crests).**—First prize, Mr. E. Vivian, Woodfield, Torquay. Second prize, Mr. James P. Hine, Thicketon, near Ilminster. Third prize, Major Servante, Hollacombe, Torquay. (The Judge strongly deprecated the pulling out of the anterior feathers in the crests of this class.)

Class 14.—**POLAND (Golden).**—First prize withheld. Second prize, Mrs. Prideaux, Mount Plym, Totnes. Third prize, Mr. Chas. Edwards, Brislington, near Bristol.

Class 15.—**POLAND (Silver).**—First prize, Mr. Cyrus Clarke, Street, near Glastonbury. Second prize, Mr. Chas. E. Coleridge, Eton, Windsor. Third prize, Mr. Chas. Edwards, Brislington, near Bristol. (This was a very good class.)

Class 16.—**ANY DISTINCT BREED NOT SPECIFIED ABOVE.**—First prize, Mrs. Brunel, St. Mary-Church. (Frizzled or Italian.) Second prize, Major Servante, Hollacombe, Torquay. (Ptarmigans.)

Class 17.—**BANTAMS (Gold-laced).**—First prize, Mr. C. Cooper, Guildford, Surrey. Second prize, Mr. J. G. Gully, Queen-street, Exeter.

Class 18.—**BANTAMS (Silver-laced).**—First prize, Mr. C. Cooper, Guildford, Surrey. (The cock died, but being good the Committee allowed the prize.)

Class 19.—**BANTAMS (White).**—First prize, Mr. Wm. Connett, Upholsterer, 270, High-street, Exeter and Torquay. Second prize, Miss A. M. Northcote, Ashprington, near Totnes.

Class 20.—**BANTAMS (Black).**—First prize, Mr. Wm. Connett, 270, High-street, Exeter.

Class 21.—**BANTAMS (Any other variety).**—First prize, Mr. C. Edwards, Brislington, near Bristol. (Frizzled.) Second prize, Rev. Grenville F. Hodson, Banwell, Somerset. (Silky Japan.)

Class 22.—**TURKEYS.**—First prize, Mr. C. Edwards, Brislington, near Bristol. Second prize, Mr. Elias Blackaller, Maidencombe.

Class 23.—**GEES.**—First prize, Mr. W. W. Rowe, Milton Abbot. Second prize, Mr. J. Blackaller, Maidencombe, Torquay.

Class 24.—**DUCKS (White Aylesbury).**—First prize, Mr. W. W. Rowe, Milton Abbot. Second prize, Miss Ann Wilcox, Nailsea Court, Bristol.

Class 25.—**DUCKS (Rouen).**—First prize, Mr. Thomas J. Brembridge, Heavitree, near Exeter. Second prize, Mr. W. W. Rowe, Milton Abbot.

Class 26.—**DUCKS (Any other variety).**—First prize, Mr. C. Edwards, Brislington, near Bristol. (Buenos Ayres.)

REMARKABLE YEW TREES.

It can hardly fail to have attracted the attention of the most careless of all observers how some soils, seemingly fertile, and producing certain crops in great abundance, refuse to do the same with crops of another kind; for we find, that while one district may be famous for certain

productions, it refuses to support others, save only in a medium way. We have all seen parks and pleasure grounds which could boast their Oaks, and it might be Thorns, and some other trees, of a size and age almost coeval with the Conquest, while Elms, Beeches, and some other trees, in no respect remarkable for their size or general health, although, in another place, these trees might surpass the Oak, &c. in their vigorous growth, and the effect they produce on the landscape.

As the most illiterate have a sort of veneration for large, old, or remarkable trees, it is no wonder that most of the extraordinary ones, should, by some means or other, find their way into some of the various horticultural works the last few years have given rise to; but as almost every place of note has its large tree, its "king of the forest," or other dignitary, it is not unlikely but the great number of remarkable ones restrains those who would otherwise gladly report them from doing so, thinking they might only be describing what so many had the means to exceed. Be this as it may, there is no doubt but a large number of very remarkable trees have welcomed the summer's sun and braved the winter's blast, for many generations, unnoticed and unknown, except by the rural population in their respective neighbourhoods, to which, memorable event of things long past, to which, our Editor has invited communications respecting these remarkable objects of antiquity, as well as of those remarkable for their gigantic size, our country friends could not do more service to the horticultural world than by forwarding a faithful description of those wonderful productions which come daily under their eye; and, by way of encouragement to such, I shall, this week, notice two or three in the immediate neighbourhood I write from; beginning, however, with a species scarcely less national than the Oak, and in its massive proportions approaching nearer thereto than many would be inclined to believe, and from the position it is often found in, a degree of sacredness is seemingly thrown over it which goes far to protect its less fortunate brethren when planted in a less honoured situation. I need hardly add that the "Yew" here is alluded to.

At what period this sombre and unchanging tree was first planted in our grave-yards is a point I willingly leave to be settled by the ecclesiastical authorities who have made it their business to inquire; but there cannot be any difference in opinion regarding the taste which selected it out from amongst the many trees indigenous at the time, and I should be very sorry to see or hear of any attempt being made to supplant it by any of those newer productions we hear lauded so much; but of this there seems little fear. The feeling of veneration for the "Church-yard Yew" amounts to something like that in which the village rustic regards the "robin," and the unwillingness to hurt either is manifested in so many ways that protective enactments are uncalled for in either case. This proper regard for the mournful "Yew" is much enhanced when the specimen is such as to demand more than ordinary notice, and it is one of that class to which I wish to call attention.

In the beautiful and romantic village of Loose, which stands in a valley, or gully, through which a small stream of water passes on its course to join the Medway, the parish church rears its head, without exciting any extraordinary claims for distinction beyond others of its class; but near to the entrance, at its western end, a venerable Yew has stood the blast of many a winter. This remarkable tree, when viewed a few yards off, presents nothing extraordinary in its outline, beyond that its foliage seems in excellent health, and extends laterally a greater breadth than the majority of such trees, but not so much as to call for particular attention, while in form it is like most of its class, hemispherical, or nearly so; but a closer approach excites the admiration, if not astonishment, of the inspector—its venerable trunk, rising out of the ground, seems to have presented a straight bole to the height of some eight or ten feet, and then diverged off into branches in the usual way. This bole, which at one time, doubtless, showed its capabilities of furnishing good sound planks for a hall dining table, is no longer what it was then, although, in the eyes of an antiquary, it presents features more beautiful; in one respect, however, it is probably unaltered—it is still

perpendicular, thus showing its stability, and giving promise to afford shade and shelter for many generations of the human race yet to come. Now, I presume that readers will think this is nothing more than many trees similarly placed give promise to, but when I tell them that the trunk of this tree, without presenting any of those uneven humps, or projections, which give a false measurement to their circumference, is, at the smallest part, between the root-claws and the breakings of the branches, no less than thirty-two feet ten inches, they will assuredly give it the credit of being an extraordinary one. True, it is no longer sound; in fact it is a mere shell with several openings, but none exceeding two feet wide, while the shell itself is from six or eight inches to a foot thick. There is space inside for a number of people, and, doubtless, many of the village rustics have, in their younger days, been within its ample enclosure. Of late years, however, the parish authorities have put a fence around it to protect it from the molestation of those who seem disposed to think that the pleasure of viewing an object is not complete without the possession of a portion of it; in this respect, the uninformed rustic is a lot more dangerous visitor than the learned collector of curiosities. In the present instance, the material has been adopted; the heavy wooden paling conceals as well as protects the object inside, whereas, an iron one need not have done so; however, the inquiring visitor will be able to see sufficient of it to form an idea of its magnitude.

It is also proper to say, that the site of this venerable object is in a narrow valley, or rather on the side of the hill forming it, and the soil seems very congenial to forest trees of most kinds, as well as most fruit trees likewise. Limestone, called here "Kentish Rag," exists in great quantities, and is dug within a very short distance for building and other purposes; and, doubtless, the roots of this tree are in contact with this material. It is needless to say that many other forest trees also present a healthy appearance, but the custom of the neighbourhood with that of former periods having been more directed to the cultivation of coppice than timber plantations, there are no remarkable timber trees immediately near, that I could hear of; besides, the tempting prices given for home-grown timber, some fifty years ago, was too great to be resisted by needy proprietors at that time, hence the absence of extraordinary trees. Nevertheless, at a short distance from the Yew above-mentioned, and in a situation exactly similar, an extraordinary fine Cedar of Lebanon erected its sturdy head. Not having an opportunity to examine it closely at the time, I could only give it a hasty glance, and comparing it with others in my mind, I thought it the finest tree of the kind I had ever seen, being evidently sound, and in the best of health, and of proportions from which a ship carpenter might obtain some six-inch planks, which, as every one is aware of, but few Oaks can furnish.

Continuing the subject of Yews, I may add, that in another Church-yard, some six miles or more from the last, there is another tree of the same kind, which, I was informed, was as large as the last, and perfectly sound. This latter qualification seemed so extraordinary, that I determined on paying this famed tree a visit; and though it fell short of what was reported of it, yet I was not disappointed, for I hardly expected to find a tree, 10 feet in diameter, perfectly sound; this one, however, differed much from the last; with a less expanded top, it presented equal tokens of good health, and its bole, which was not very short, was gnarly and covered with those short spray twigs, or branches, which in a great measure hid it from view; however, a string run round underneath them, and at the distance of four feet from the ground, presented a circumference of upwards of twenty-seven feet; and though I could not pronounce it as sound timber, I am satisfied there were no hollow spaces of any extent. This description will probably make it appear as a more extraordinary tree than the first-named, but then it is to be considered, that at the place where the circumference was taken the girth was more than at one foot from the ground; in fact, the tree presented a sort of barrel-like swell at that height, both above and below being smaller; nevertheless, its size, general health, and comparative soundness, was such as to command

respect. I may also add, that it, too, seems to luxuriate on the Limestone range, although its site was more elevated and exposed, being, in fact, on one of those eminences which command a view of eastern parts of the "Weald of Kent;" and our young friends will find its hill on the county map under the name Ulcomb.

A third tree, scarcely less interesting than either of the last, exists in the churchyard at Leeds, near Maidstone, another rural parish but a few miles from either of the last-named. This tree is, however, hollow, and has also the singular form of being much thicker at a yard from the ground than at one foot from it; at the former height it is upwards of thirty feet in circumference, and several openings admit of its holding several persons, who are not in this case debarred by an unsightly fence; but the tree is certainly not so remarkable as the one at Loose, the latter presenting limbs of some five or six feet diameter at the breaking; whereas, those at Leeds are much less; still, it is a remarkable tree, and bids fair to live for many generations yet. It is, however, much exposed: and the barbarous practice of digging graves so near a relic of former times, may, doubtless, tend to lessen the days of this, as well as of many other trees similarly placed; but as this is a sacred ground, and calculated to excite the indignation of the parish authorities the propriety of restricting innovations of this kind as much as possible; and though the anxious wish of some eminent parishioner to be buried under the Yew-tree may seem a duty on the part of those to whom the bequest was made, we are far from certain, that the next generation will regard the injury done to so venerable a relic in the same light. However, as I professed only to describe the trees as they are, without prescribing rules for their future welfare, I must leave the latter part of the duty to more experienced hands; and, in conclusion, will be glad to learn what part of the kingdom can furnish finer Yew-trees than those to which I refer; and hope to find some other correspondent informing us where remarkable trees, either of this, or other kinds, may be found; for I believe that many such do exist, unknown save in the immediate neighbourhood of their site.—A CORRESPONDENT.

THE POULTRY PENTALOGUE.*

ONE of the most useful little poultry manuals, with its information, moreover, conveyed in an amusing form, that have lately appeared on this now popular subject, is thus entitled.

The Five great rules, whence its appellation, are thus specified:—1, Pure Breed; 2, Fresh Blood; 3, Varied Diet; 4, Equable Temperature; 5, Strict Cleanliness. Poultry-keepers, indeed, might be at variance as to the manner in which these various requisites would be best provided for, but that these form the main requisites towards success, all would assent to; and wherever failures have come before us, to the neglect of one or other of these essentials has the cause been manifestly referable.

The advice for the interior economy of the Fowl-house is a fair specimen of the form in which the author's recommendations are conveyed, and is so well, and yet so simply, put, that we will now transcribe it for our readers' benefit.

"Brick or stone is too cold for the flooring, which had far better be of lime, ash, or well-beaten earth. The former is best, as it can be more easily swept and kept clean. It should be above the level of the external soil to avoid damp. The whole of the interior had better be plastered, as the rough walls and thatch are likely to collect dirt and vermin. If the roof is tiled and slated, plaster is still more necessary to check the extremes of heat and cold. Two or three coats of whitewash in the course of the summer, especially, will be found very conducive to health."

When we come to directions for feeding and general management equally safe guidance is briefly given.

At page 17 we light on "the mysteries of Chickendom."

* "The Poultry Pentologue; or Five Rules for Fancy Fowl and Fowl Fanciers." By James Furneaux, Esq., President of the Devon and Cornwall Poultry Association.—W. S. Orr and Co., London; published by R. Lidstone, Plymouth.

where a restriction is placed in the number of consorts to be allowed the male bird. The limit to which our author would restrict the harem, namely, three hens, is, we apprehend, unnecessarily close, and, under ordinary circumstances, we should feel no cause for anticipating inferior produce, provided the male bird be in good condition, where five or six hens were permitted to run with him. Our remark is general on this point, for certain cases would, doubtless, claim exemption from our more liberal allowance, where, for instance, every effort was put in requisition to breed the choicest specimens for exhibition; or where, again, the cock was young, or the narrow boundaries of a small yard was all the space allowed for their run. In former days, also, another class of birds would have been as carefully set apart, namely, the Game-fowls that were destined to produce champions for the pit, where these, and frequently but two hens, were thought as many as would be wisely left with the cock.

Chapter ix., bearing the ominous title "Revolutionary," touches on the question of how far it may be practicable to establish permanent races from cross-breeding the present different varieties. In a matter like this, where the opinions of experienced persons are at variance, we must express our acknowledgment of our ^{own thoughts with caution,} mistrust of any such result, ^{as far as we} may judge from trials. At page 41, Mr. Furneaux illustrates his theory, while alluding to the delicacy of the Dorking race, which he thinks might be invigorated without any lasting prejudicial effects in the breed, "*by the infusion of a dash of Game blood.*" "The progeny of a Game cock and Dorking Hen will be half-and-half, all of which, with the exception of a single cockerel, should be consigned to the cook, and the survivor should have as little of a Game appearance as possible. If put with Dorking hens, the chickens will be quarter Game; and the same plan being pursued for another generation, the cross will be reduced to an eighth, after which there will be little chance of the birds '*crying back.*'"

Now, this argument is based on the hypothesis that in breeding from fowls of different families the produce will present a proportionate combination of the characteristics of both parents. But is this so? In few cases, we believe, is the amalgamation by any means so perfect, and in the chickens of such a brood we should expect to find some bearing a close resemblance to one parent, and some reproducing the features of the other, while comparatively few could be correctly termed half-and-half. If this uncertainty prevailed in the first cross, still more questionable would be the chance of fixing the Game character at the exact quarter in the next generation. Since, therefore, with all our care, we can never be positively certain in what proportions the desired combination may be brought about, the advantages to be gained by cross-breeding fowls appear to present so great a hazard of injuring our pure breeds, that few beyond those to whom the test of the experiment is sufficient to interest will be likely to take shares in this lottery. The introduction of a "pile" Game-fowl into a strain of black-breasted reds is said to have made its appearance after a lapse of fifteen years, when, moreover, for many generations not a symptom of it had been apparent. We certainly believe that in nine cases out of ten the Game blood, in such an instance as that suggested by Mr. Furneaux, would be bred out in three or four generations, from the universal tendency in Nature to revert quickly, in such unions, to the type of one or other of the original parents. All we contend for in this, as in other crosses between the different breeds of fowls, amounts to this, that it cannot be said that such produce generally will exhibit in form, feather, or properties, any very near approach to the proportion of the parents' features to which their origin would entitle them.

But we should be guilty of great injustice to Mr. Furneaux were we to leave our readers under the impression that he himself is in favour of the practice we have just spoken of. So far from it, indeed, that he expressly says (page 22), "But, although I maintain the practicability of forming new varieties, either by taking advantages of the freaks of Nature, or by pursuing some systematic course, I am by no means an advocate for the trial of the experiment. To say nothing of the confusion and mongrelising that would inevitably ensue if the practice were generally adopted,

I do not think that the public taste would encourage the endeavour to inundate us with a multitude of new races. There is something in John Bull's composition, which, so long as he is a *bona-fide* Englishman, acts as an useful drag upon his spirit of enterprise, and reduces its speed within controllable limits. With his descendants it is otherwise; and the go-ahead mania of the United States is continually developing itself in such characteristic proceedings as the manufacture of wooden nutmegs, Aztec children, or Brahma-Pootra fowls, the last two of which have been rejected by our ethnologists and ornithologists during this year. Whilst, then, I venture to uphold the revolutionary doctrine of the possibility of forming new varieties of poultry, I in no way maintain the desirability of it."

We have said enough to satisfy our readers that Mr. Furneaux's pamphlet is the work of a thoughtful, unprejudiced mind: that, discarding compilation from the labours of predecessors in the same tract, details the actual results of practical poultry-keeping; as such, therefore, it will, doubtless, be duly welcomed by those to whom its subject-matter is an object of interest.

GAPES.—INFLAMMATION OF THE WINDPIPE.

FANCY a young practitioner called to the bedside of a patient who lies gasping for breath in the agonies of suffocation; and fancy the young practitioner, either from want of observation of the symptoms, or from being prejudiced, taking the disease to be inflammation, and treating it as such; and the weakened patient dying, and the cause of the stoppage of the windpipe being discovered to have been mechanical, and with no relation to inflammation at all: What would be thought of that practitioner? If he were timid, hesitating, or erring through want of more perfect information upon the subject, we should pity while we blamed him: now let us carry the simile into the poultry yard, and let the practitioner be the fancier of fowls, who in the course of the year has dozens, if not hundreds of feathered patients, who, if they cannot speak, yet can open their mouths in a manner quite expressive of the character of difficult respiration. How is he to treat these poor little chickens that every now and then open their mouths and "gape?" If he belong to the positive school, he will "Pooh! Pooh!" any idea but that of the disease being inflammation, and he will treat the poor *weak little chickens* with Tartar Emetic, and *they will die*—and it only remains to write a book to prove that they ought to have lived! But if he be a practitioner of the other class, he will, with all modesty, trace effects to causes; he will cautiously observe symptoms without preconceived notions about the nature of the disorder, seeking earnestly what light the experience of other practitioners may throw upon the subject; and the following is a synopsis of what he will find, and which, I think, shews pretty clearly that a great deal that is practical and good has been put forth and verified, step by step, and very much of it in the pages of the "COTTAGE GARDENER."

Fowls seem to be threatened with suffocation from two disorders very different in their nature and symptoms; the first, which is known by the name of "gapes," being peculiar to *chickens*, and being the result of a mechanical obstruction: the other being an inflammation of the windpipe occurring in *full-grown fowls*, and being of the nature of "croup."

Gapes.—In wet, cold weather, or soon after it, the chickens are observed to gape suddenly, and to do so "at intervals," "with a muscular motion of the neck, as if they were endeavouring to dislodge something from the throat," in the intervals of gaping the breathing being natural: experience has shewn that this proceeds from the presence in the windpipe of one or more small red worms, of about three-quarters-of-an-inch in length; and that if these parasites are allowed to grow or develop, that the chicken will die suffocated; an after-examination of the windpipe displaying no trace of inflammation; but, that if the chicken affected with gapes be made to swallow the vapour of turpentine at intervals, or if a small portion of turpentine be passed down the windpipe so as to reach the worms, they will be dislodged, coughed

up, and the chicken, in a very large proportion of cases, will live and do well.

Croup, or inflammation of the windpipe, generally attacks full-grown fowls, and is distinguished from *gapes* in that the *beak is constantly kept open*, while the breathing is harsh and stridulous; this being evidently an inflammatory affection is treated successfully with Tartar Emetic and warmth, and would be manifestly injured by the application of turpentine, so useful in curing "gapes."

It will be seen, at once, that many of the foregoing symptoms are extracted from the excellent and practical letter of Mr. Tegetmeier, in a late number, and who is so good an authority that I believe I may assume them as facts; I have endeavoured to shew how much they prove, and, that they are of enormous importance, I am sure will be felt by all owners of the valuable breeds of poultry.

I should think the general remarks of Mr. Tegetmeier, together with the undisputed matter in evidence, has put the matter of "gapes," quietly to rest: we are tolerably good practitioners in the disease, considering we had not much guidance from the lamp of science; indeed, the only point which remains is of quite minor importance, though it is a *forever important*. How do these parasitic creatures get in to the chickens? I understand parasites hatched from ova, but in the case of the chickens there would be no time for this; and it is difficult to imagine the ova as present in the chicken before it makes its exit from the egg.—JOHN ANTHONY, Washwood, near Birmingham.

TO CORRESPONDENTS.

* * We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

GREENHOUSE AND MELON-PIT (Rev. J. S. L.).—You wish to heat both by one fire. The greenhouse is 13 feet by 11 feet 7½ inches, the melon-pit is 6 feet from it in front, and 13 feet by 6 inside measure; an open tank has been made of brick and cement, and top-heat, as well as bottom-heat, is required. The first thing, then, to do, is to fix the site of the stock-hole, which should be between the house and pit, or at the end of the latter. In either case, it must be sunk enough to allow the top of the boiler to be lower, six inches or so, than the bottom of your tank. Then, if your stock-hole was between the two, you might have a T piece for a flow and return, taking one into the greenhouse, and the other into the melon-pit, and both in nearly the same level; but, in the latter, it should terminate in a small cistern, to which the flow-pipe for top-heat, and the one for bottom-heat, should be attached, and supplied with plugs or valves to take the heat off, or let it on, at pleasure. If your stock-hole was at the end of the melon-pit, it would be preferable to have the flow-pipe taken into an open cistern there, higher by a foot or two than your pipes for top-heat, and have three holes in that cistern for pipes being fastened to,—one for the greenhouse, one for top-heat in melon-pit, and one for bottom-heat ditto, so that you could stop and regulate the heat in either at discretion. Under such a supposition, you would require two four-inch pipes—a flow and return—round the front and part of the ends of your greenhouse, two three-inch pipes for top, and two for bottom, in your tank, for melons. In each of these cases, see that the flow-pipe rises a few inches to the farthest extremity from the boiler or cistern, and there fix a small open pipe, to be taken outside the building to allow the escape of air. If the bottom of your tank was no lower than you could put your pipes in the greenhouse, and you could depend on your tank holding water, then you might dispense with pipes altogether in your melon-pit, by running a division up the middle of your tank, except at the farther end, taking one end of your T piece into the tank, and the other into the greenhouse, and covering your tank with strong slate, and leaving part of that uncovered, so as to supply you with top-heat. We have seen such contrivances act admirably, but they are not to be depended on like separate pipes. Near the end of our second volume, you will find a most economical arrangement by means of a wooden tank, described and illustrated by Mr. Fish. You will perceive, that under this mode, were the pipes in the greenhouse higher than your tank they would empty themselves into it. Taking the water from the boiler at once to a cistern higher than the highest pipes, and then by means of plugs or valves letting it on where you wish, is the most manageable mode, and, perhaps, the cheapest in the end. You would see, by some articles of Mr. Fish, lately, that when pipes are used for bottom-heat, with plenty of rubble, tanks may be dispensed with; but the latter, even with pipes, are useful for affording a moist bottom-heat. Any of the tradesmen who advertise in our columns would do your work well.

VARIOUS (C. I. S. A.).—Your *Cobaea* has very likely robbed your *Mandevilla*; they should have been planted in brick divisions. Do not mind the sickly look of the latter now; ours has long ago lost its foliage; prune it rather close by-and-by. Your temperature, 40° at night, and a rise of 10° during the day, is all right. We are pleased the plants you

name are so healthy,—a sure sign you know what you are doing. Do not fret about the *Habrothamnus fasciculatus*, it is not worth room in the house; it will repay your attention far better against a wall out-of-doors. *H. elegans*, if planted out against a pillar, is one of the prettiest things we know. We have a large plant just now one mass of bloom, and it has never been destitute of flowers for several years.

FEEDING BEES (Honey Bee).—Tin vessels for feeding bees are not at all injurious to them. If your bees are weak, that is, if they have less than seven pounds of honey in store, begin feeding immediately. Payne's hives, &c., are to be obtained only through himself—his direction is "Bury St. Edmund's." If your bees have nine or ten pounds of food in store, give barley sugar; if less, for a week or two, give honey and sugar, and then barley-sugar.

METROPOLITAN SHOW.—F. Bernal, Esq., says—"I am writing to you on Monday evening. I received my fowls back from Birmingham Show on Sunday morning. At six, p.m. to-day, the two pens of Ptarmigans exhibited by me at Baker-street have not made their appearance! This, I think you will agree with me, must arise from great carelessness somewhere. Next week I will let you know where it has arisen, as at present I am not able positively to fix the blame on any one. I will also then, if you will give me space, tell you how to produce the so-called Andalusian Fowls, and bring forward "facts."

DISEASED EAR OF RABBITS.—To the inquiry, at p. 292, we have received these replies—"The disease which affects your correspondent's (*Ascut's*) Rabbits, is, I should suppose, by the description, what is termed, *wax in the ear*. I do not know the real cause of the disease, but the best remedy I ever tried, or heard of, is to remove this wax, or scurf, from the inside of the ear, and apply *oil of sweet almond*. I have no hesitation in saying a speedy cure may be effected." It may be as well to add, that the symptoms of this disease approaching are continual shaking of the head; and if taken in time may easily be cured.—ORIX."

"I have frequently found Rabbits subject to the ear disease, but the cause I am quite ignorant of. I beg to inform *Ascut*, if he will occasionally examine the ears of his rabbits, and, on seeing the least symptom of the disease recurring, drop a little sweet oil and turpentine into them, all will be right. I once kept rabbits; and, at my first onset, was nearly discouraged by this rather noxious disorder, but an old fancier let me into the secret, and ever afterwards all went on well. I had no recipe as to proportion of oil and turpentine, but, at the commencement, I procured a half-pint bottle, into which I put a rather large teaspoonful of turpentine, and then filled with sweet oil; this I kept always at hand. I object to picking, or in any way meddling with their ears more than is necessary to drop in the oil, taking care to always well shake the bottle before doing so. I believe the disease is infectious.—D. E."

TRELLIS WITH EVERGREENS (Odemeretaw).—You want just the very same things which all great lovers of, and enthusiasts in, gardening want when they first begin—*very choice, very good, very pretty* evergreen plants and climbers, or "pretty flowering evergreens," but nature has never thought fit to indulge mortals in such extravagances; and there are no such plants as you ask for, at least, not in temperate latitudes. Evergreen Roses would soon cover your trellis, and soon after that they would be too much confined. We would plant a dozen kinds of the best hybrid perpetual Roses for a division fence, six feet high; and the index to the last volume will show when to look for them, and the best of the evergreen Roses as well.

ÆCHMEA FULGENS (Dan).—Either your plant of this must have been very young when you had it, or you put it in a large pot too soon, and so prevented its flowering, for no plant flowers more freely when well used. Do not shift it this spring, but give it strong peat and moisture from March till the end of June, then less water and a drier place, and you will soon see it in beautiful bloom.

ORCHIDS (Ibid).—Ill-treated orchids are a long time coming round, but you have acted fairly by them since they came into your possession. Continue as you have begun, and trust to patience.

ALLAMANDA (Ibid).—All the Allamandas flower on the young wood made the same season, like the grape vine; therefore, to keep them within bounds, and to get them to flower abundantly, they must be cut in very close at pruning time; but, like vines, if you want them to cover a large space in a short time, you would not cut them in so close in pots. All the wood of last year may be cut down to one, two, or three buds from the old wood.

CAPE BULB (So, Durham).—The leaves sent are those of some *Babiana*, and, we think, of *Babiana plicata*, with purplish little flowers in May. Your plant seems to have been potted early in September, or it has been kept too warm, for it is as forward now as it generally is in the middle of March. These *Babianas* are among the smallest bulbs of the Ixia tribe; sandy peat is the best for them in pots, and all the heat they require is to keep the frost from them. Your plant will go to rest early in May, but it is doubtful if it will flower this season from May to the end of September. Keep it dry, and, after potting, keep it cool all through the winter; from six to ten of its little bulbs will grow very well in our 48-sized pot.

SPANISH FOWLS.—Mr. Painter informs us, that his birds at the Metropolitan Show took the third prize for Spanish Chickens, his birds having, by mistake, been put into pen 48, which, as in the catalogue, had been assigned to Mr. Taylor.

FOOD FOR DUCKS (Oriz).—The following are our directions given in "The Poultry Book":—"We allow them, morning and evening, a liberal mess of steamed Roots, Carrots, Turnips, or Mangel Wurtzel, as the case may be, mixed up with bran and a little barley-meal. The refuse of the kitchen-garden is eagerly devoured, and, where grass is not obtainable by them, must be regularly supplied to them. When feeding them for table, a portion of skim-milk with their meal forwards them very

rapidly." As to the mode of rearing Ducklings, we must refer you to the same work, of which it occupies four pages.

BREAD.—S. F. I. says—"I shall be much obliged by any receipt available for the poor, during the present high price of food, for making Bread with a mixture of Indian Meal, Rice, Barley Meal, or any other article of food cheaper than Wheat." We shall be glad of any communication on so important a subject. Our own experience enables us to recommend the addition of two pounds of boiled potatoes, rubbed through a colander, to half-a-peck of flour.

DAMP AND WATERY SITUATION (H. H.).—The only poultry fitted for such a situation are Ducks.

SHANGHAES (Amicus Galli).—The ear-lobes, and all about them, ought to be red; but we should not consider a white stain upon it a defect preventing the bird taking a prize if otherwise sufficiently meritorious. Is it a permanent stain, or is it merely "white comb," and removable by being rubbed with an ointment of turmeric and cocoa-nut oil? *Hempseed* bruised, and in very small quantities, is useful for young chickens; but we deprecate such stimulating, rich food for the breeding stock. We prefer the second sitting of *pullets'* eggs to the first sitting.

GROWING FOOD FOR PIGS AND FOWLS (Isle of Wight).—Divide your ground into two equal parts, and grow alternately on one-half Barley, and on the other half Carrots, Parsnips, and Mangold Wurtzel. When these crops are off, steal a crop of Coleworts from the vacant ground. This incessant cropping will require very liberal manuring. Of Pigeons, we should keep *Runts* for table purposes.

MANURE FOR CELERY (M. P.).—The dungs of hens and sheep are excellent for Celery. You may mix them with the soil before planting, and you may make liquid-manure from them for watering the plants while growing.

RADISHES IN FRAMES (J. B.).—These cannot be grown too near the glass; two or three inches from it is not too near. You may sow them now, and have them off before you require the frames for Cucumbers in April.

CARROT GROWING (W. F. B.).—A light, deep soil, trenched, and a little manure turned in with the bottom spit is the best. Sowing about the third week in April is a good time for avoiding injury to their roots by the grub.

TRANSPLANTING CABBAGES (G. Tasker).—If you move them with a trowel they scarcely receive any check. We should prefer this mode; for the loosening the soil receives by digging and manuring is very promotive of growth.

MOTH IN WARDROBES (G. A. G.).—We are informed that spirit of turpentine sprinkled on sheets of paper and placed among the infested articles effectually destroys the Moth.

DISEASED EGGS (F. W. S.).—You were answered at page 192.

LAYING-OUT GARDEN (L. M.).—Nothing would induce Mr. Beaton, nor any other gardener of discretion, to lay out a garden he has never seen. He merely criticises the arrangements intended.

SOOT (A Subscriber from the Beginning).—Soot is a very useful manure for Wheat or Clover, the former, when thin of plant in the spring months, would be greatly benefited by the application of about fifty bushels per acre, sown broadcast on the land in the month of March, during dry weather. It should be harrowed in, on a still, quiet day, but in order to prevent its flying before the wind, and thereby insure a regular distribution, it is advisable to mix common salt or damp ashes with the soot. The benefit to be derived from an application of soot to Wheat will be more in the produce of straw, and its peculiar property is to induce the Wheat plant to tiller and branch out. It acts somewhat in the same manner upon the Clover plants, inducing a very luxuriant foliage. The properties of soot, as manure, may be compared to Guano, except as regards the phosphates. Your other query we are enquiring about.—J. B.

BRAHMA POOTRAS.—B. P. writes to us as follows:—"Many amateurs wish to know why the judges at the Metropolitan Show this month gave the prizes in the Brahma Pootra class to birds with small combs, similar to the Malay. That a Malay head should be put upon a Brahma Pootra fowl, which is evidently of the Shanghae race, requires a little explanation, and the poultry world ought to know the authority upon which the judges acted."

PARSNIPS (A Poultry Woman).—They will not produce roots of useful size under a plantation of laurels. Your other question will be answered next week.

PEAT CHARCOAL (L. R. Lucas).—Apply to Mr. Purser, Secretary of the London Manure Company, Bridge Street, Blackfriars.

autumn-sown ones; (Hardy) sow in borders, &c.; for early blowing, sow in pots in a hothouse. *AURICULAS*, dress, and attend carefully those under glass, as the buds appear. *BIENNIALS* (Hardy), sow, e. *BULBS*, finish planting. *CARNATIONS*, plant, and shelter from cold winds. *DAHLIAS*, sow, and place tubers in hotbed, to break buds for slipping. *DRESS* borders generally. *EDGINGS* of Box, &c., may be planted and repaired. (See January). Cut round the roots of *evergreens*, to remove about next July. *Evergreens* removed last autumn may have liquid manure in fine weather. *EVERGREENS*, plant in mild weather, e. *GRASS*, roll and sweep weekly. *GRAVEL*, roll, and weed in dry weather, weekly, and try the *concrete* system. *HEDGES* (Deciduous), plant, b.; (Evergreen) plant, e. *HYACINTHS*, shelter, for they begin to appear. *MIGNONETTE*, sow in pots, and place in hotbed, or hothouse, and greenhouse, for succession. *NEATNESS*, attend to everywhere. *PERENNIALS* (Hardy), sow, e.; plant suckers, slips, and partings of roots; (Half-hardy) uncover, if frosts gone. *PLANTING* of flowering shrubs, complete. *POLYANTHUSES*, sow: earth-up with rich compost. *POTTED SHRUBS*, prune, shift, and dress the soil; pot off bedding geraniums, &c., from stove pots. *RANUNCULUSES*, finish planting, b. and c. *ROSES*, prune strong ones, and leave some to prune in April for late flowering; manure with cow-dung. *SOWING* of tree and shrub seeds, complete generally. *SUPPORT*, with stakes, &c., newly-planted shrubs. *TULIPS*, shelter as they are now appearing. *TURF* may be laid, and see that plants are in heat for *cuttings*, such as *Lobelia*, *Verbenas*, &c.

Climbers, such as honeysuckles and jasmines, should be pruned and trained in the early days of the month. *Reduce* to moderate sized patches such plants as phloxes, asters, veronicas, &c., otherwise they will occupy too much space, injure their neighbours, and harbour vermin. *Herbaceous plants* should be planted out from nursery-beds into the borders without delay. *Half-hardy shrubs*, &c., may have their shelters partially removed, closing them at night according to the mildness or severity of the season.

GREENHOUSE:

AIR, admit freely among hard-wooded plants, such as *Ericas*, *Epacris*, *Diosma*, &c., when the atmosphere is clear, and the outside temperature from 35° to 40°. In damp, foggy, or frosty weather, it is better to use little firing, and keep the house more close, unless you have the means of heating, and so far drying the air before it is admitted—the drying, of course, to take place only when the air is loaded with moisture. When the fog gets into the house, light a little fire and give air, and it will soon be dispersed. All these plants will now want more water, but do not give it in dribbles; after doing it thoroughly, wait patiently until the soil is getting dry. Those in full bloom may have similar treatment, especially if the sun will raise the house to 55°. Those swelling and opening their heads must not be lower than 45°, with 10° or 15° more in the middle of the day. *AZALEAS* and *CAMELLIAS*, place those swelling and bursting their buds in the warmest end of the house, and you may remove them to the coldest end when in bloom. Supply such rather liberally with water. Those to be retarded, keep as cool as possible, and not so moist. *BULBS*, *CINERARIAS*, and *PRIMULAS*, in flower, assist with manure-water; the double *Chinese Primula* give a warm corner, as it is (especially the white) a splendid object when well grown. The night temperature of these should not be below 45°, if desired to keep them in full bloom, with 10° more in the middle of the day. *Cinerarias*, for blooming, do best at this season in small pots; those desired to make fine specimens in May and June, should not now be allowed to be pot-bound, or be stunted any way, but kept slowly growing. *Forsythia viridissima*, *Deutzia scabra*, and *Weigelia rosea* will yield their blossoms during this and the following month if slightly forced. Forced hardy shrubs keep p at the warmest end of the house at first. *Begonia obliqua* makes a fine conservatory plant in winter, if the night temperature is seldom below 45°. *CALCEOLARIAS* and *GERANIUMS*, keep at the best place for light and heat. All these soft-wooded plants require more heat than the hard-wooded ones; the former shift as necessary. The forwardest of the latter, stopped and shifted before Christmas, tie out and train. Place in flowering-pots those stopped some time ago, and now breaking; and stop more young plants for succession, to be shifted when the buds have broken again. *Franciscia latifolia* and *uniflora*, do well in a conservatory at this season, if they had previously received a little extra heat, after being allowed to become deciduous in the beginning of winter, the wood being well-perfected previously. *FUCHSIAS*, start some favourite kinds, if you can, in a nice, sweet, slight hotbed, as at this season they stand a little bottom-heat well, though, when fairly started, a medium temperature makes better plants than a high one. Cut them well down, and thin the shoots afterwards, to as many stems as you may require. The young shoots taken off, treated as cuttings in the hotbed, under a handlight, or shaded, will make choice summer and autumn plants. Repot those for the greenhouse by the end of the month, and prune back freely; those intended for cottage windows had better remain in their winter quarters for another month, keeping them rather dry, and as cool as possible, so that more room at present may be afforded to other plants. The same HOTBED would do for *seeds*, *cuttings*, &c.; and also for starting some *Achimenes*, *Gesneras*, and *Gloxinias*—the two former either in the pots by which they grew, or by removing the tubers, and placing them in pans with light earth, until they grow a little; the latter either in their late pots before they spring, or, what will do as well, in fresh pots and soil, so that, whenever they start, they take hold of the fresh material. **FOR FIRES, PROTECTION, DRESSING, AND CLEANING**, see last month. *Insects* will now begin to be busy, and the best antidotes and sulphur vapour and tobacco fumigation, but, above all, cleanliness and good cultivation. **SCARLET GERANIUMS**: old plants, stored in pits, seeds, garrets, &c., examine. Remove all parts that are mouldy and damped. Dust with lime and charcoal, and expose more to the light, that the young shoots may break vigorous and strong. R. FISH.

CALENDAR FOR FEBRUARY.

FLOWER GARDEN.

ANEMONES, sow; finish planting, b. and c. **ANNUALS** (Tender), sow in hotbed; admit air to daily; water slightly; cover with mats the glasses at nights; sow seeds of blue and white *Campanula carpatia* in heat, for autumn-flowering, e.; pot old plants of each, and put in heat for cuttings, b.; sow *Nemophila*, and other *Californian annuals*, to flower after

FLORISTS' FLOWERS.

AURICULAS and **POLYANTHUSES**, proceed without delay to top-dress with rich, light, well-sweetened compost. Water them two or three times during the month, giving it only in the morning; give plenty of air on every mild day, but shut up early, and cover up securely every night, for a sudden frost would cripple the blooms. **CALCEOLARIAS**, repot; sow seed of, keep clear of insects, and give air daily, to prevent damping-off. **CARNATIONS** and **PICOTEES**, attend to with water and plenty of air in mild weather. **CINERARIAS**, smoke frequently to destroy green fly; repot, middle of the month; give free supplies of water to, and plenty of air. **CHRYSANTHEMUMS**, put in cuttings of, latter end. **DAHLIAS**, look over the roots, and remove all decayed bulbs. Set some in a warm place to start growth, and afford cuttings. **FUCHSIAS**, pot, latter end; put in cuttings of scarce sorts early, to afford good blooming plants in July. **HYACINTHS**, protect from severe weather, with hoops and mats. **PINKS**, in fine weather stir up the surface of the soil; press any that the frost may have disturbed down into the earth again. **RANUNCULUSES**, plant early in the month, choosing a dry day for that purpose. **TULIPS**, shelter from frost and heavy storms of rain, snow, or hail. **VERENAS**, look to, trim off all mouldy leaves, give water to when verdant, and plenty of air every day not actually frosty. **WATER**, give to all florists' flowers in pots. Should the green fly appear, promptly destroy it by tobacco smoke. Look after **SLUGS** in the frames or pits, and destroy them. T. APPLEBY.

PLANT STOVE.

AIR, give freely on all proper occasions, but shut up early in the afternoon. **CUTTINGS** of various plants desirable to increase may be put in towards the end of the month. **DIVIDE HERBACEOUS PLANTS**, such as *Achimenes*, *Bilbergias*, *Tillandsias*, *Vriezias*, and *Hedyochiums*, repot and divide also. **IXORAS** (specimen plants), repot; prepare young plants of, to make specimens by potting, tying-out, and giving more heat and moisture. **INSECTS**, diligently extirpate, by every means, such as cleaning the plants with a sponge, smoking with tobacco frequently, and washing the pipes with sulphur-water to destroy or keep down the red spider. **POTTING**: this is the month to go through the whole of the stock and repot them; let batches of such things as *Achimenes*, *Gesneras*, and *Glorias*, be potted from time to time. **WATER**, give freely as the plants grow and the days lengthen. **SOILS**, prepare for use by placing them under cover to dry and warm. **SYRINGE**: use this instrument almost daily, to give moisture to the air, and refresh and cleanse the leaves of the plants, and to keep down the red spider. Let everything be kept clean and sweet, let no decaying leaves be seen, nor moss appear on the pots or walls. T. APPLEBY.

ORCHID HOUSE.

THE season has now come when the general *potting* of the orchids will be needful. Numbers will be growing, and then is the best time of all for potting. The materials must be provided in good time, in order to be in good condition. Fibrous turves of peat, the same of loam, sphagnum or white bog moss, charcoal, and broken pots, are the principal articles wanted. New or well-washed pots must also be provided. The turf should be brought under cover and placed where it will become partially dry. It might be laid upon the pipes or flues for that purpose. **AIR** will, during the month, be frequently necessary. To keep the house up to the mark of *proper heat*, good fires will be necessary, and if the sun should break forth, the thermometer will run up rapidly, and then air is necessary to reduce the heat. **BLOCKS**: the plants on these will require the syringe to be used daily; refresh such plants on them as need it, with new blocks, before the plants begin to push forth. **BASKETS**, renew when necessary. If the baskets are made of wire, give fresh sphagnum, and larger baskets, if needful. **DENDROBES** will begin to show buds of bloom, give water to and repot them as they need it. **HEAT**: the season of growth for most kind of orchids being come, the heat may be increased 10° by day, and 5° by night. **INSECTS** must be diligently destroyed. **MOISTURE IN THE AIR**, increase during the month. A dry atmosphere, now the plants are growing, will cause them to grow weak and spindly, especially *Dendrobis*: let the pipes, flues, walls, and floor be diligently wetted every day, especially in the morning. **POTTING**, proceed without delay; if the young and tender roots push much before this is done, there is great danger of their being broken off. **WATERING** at the root to plants growing must be given freely. Let all the walls, stages, shelves, window-sills, and the glass, have a *thorough cleaning*, to sweeten the air of the house. In potting, attend to the leaves and stems of the plants, sponge them well over in every part; nothing is so injurious to plants as having their breathing pores stopped with moss or dust. T. APPLEBY.

ORCHARD.

APPLES, prune, train, and plant. **APRICOTS**, plant, train, and cover, b. **BLOSSOMS**, cover directly to *retard*. **CHERRIES**, plant, prune, train. **CHESNUTS**, plant and sow. **CURRENTS**, prune, plant, b. **CUTTINGS** of all fruits, plant, b. **DRESSING**, carry out of all borders; beware of the spade. **FILBERTS**, plant; hang catkins, and remove suckers. **GOOSEBERRIES**, prune, plant, train. **GRAFTS**, collect immediately; put them in a cold corner; in May commence operations at, e. **LAYERS**, make. **MEDLARS**, plant. **MOSS**, remove; use brine. **MULBERRIES**, plant. **NECTARINES**, plant, prune, train. **ORCHARD-TREES**, finish planting and pruning; top-dress old ones. **PEACHES**, as *Verdurines*; apply sulphur and lime wash. **PLUMS**, plant, prune, train. **PEARS**, plant, prune, train. **QUINCES**, plant. **RASPBERRIES**, plant,

prune, tie. **SUCKERS**, remove from all fruits. **VINES**, plant, prune, train. **WALNUTS**, plant and sow. Watch for the scale, aphides, and other insects, and try to utterly exterminate them. R. ERRINGTON.

FORCING HOUSE.

AIR, admit on all occasions, if safe. **APRICOTS**: see *Peach*. **CUCUMBERS**, keep good linings to dung-beds; sprinkle bed often; air frequently; bottom-heat 90° maximum. In houses, train regularly, stop occasionally, and give liquid manure, with a moist air heat of 70° to 80° . **CHERRIES** as *Peaches*, only a lower maximum—say 70° —sun heat. **CAPSICUMS** and **CHILIES**, sow, b. **FIGS** as *Peaches*, only a higher minimum—say 60° . **GRAPES**, late, keep dry and cool; thin the berries. **HEAT**, in all cases, in proportion to, and advancing with, light. **KIDNEY BEANS**, 65° to 70° ; plenty of air, moisture, and a light situation. **MELONS**, sow; provide beds, &c.; air-heat, 70° to 80° ; bottom-heat, 90° maximum. **MOISTURE**, constantly provide the air with, wherever fire-heat is used. **NECTARINES** as *Peaches*. **PIXES** (*Fruiters*), rising, increase warmth and air moisture; liquid-manure to the roots occasionally; (*Successions*) still dry if in dung-pits. **PEACHES**, disbud, and pinch gross shoots; fumigate occasionally. **POTATOES**, get out successions. **STRAWBERRIES**, introduce plenty; keep moist air, frequent ventilations near glass; maximum 65° . **TOMATOES**, sow, b. **VENTILATION**, night and day, as long as air, moisture, and heat is secured. **VINES**, disbud early, and attend to thinning the berry; keep clear of all waste spray. Keep a mellow state of air, neither damp nor dry, but a permanency of air moisture. **WATERING**, attend to with regularity and precision. R. ERRINGTON.

KITCHEN GARDEN.

ARTICHOKES, defend from frost. **ASPARAGUS**, plant in hotbed, and attend to that forcing. **BALM**, plant. **BEANS**, plant; earth-stir, and transplant from frames, e. **BEETS**, sow a little for early use; plant for seed, and dig up for storing any left in the bed. **BORECOLE**, sow, e. **BROCOLI**, sow a little, e. **BURNET**, sow or plant. **CABBAGES**, plant; sow; and plant for seed. **CABBETS**, sow on gentle hotbed for early use; attend early to thinning advancing crops, &c.; plant for seed, e. **CAULIFLOWERS**, attend to, airing, earth-stirring, removing all decayed leaves and slugs; plant out winter standing, should the weather be open and mild, and attend to spring-sown crops (see last month); sow, if required; prick out. **CELERY**, attend to earthing-up, protection, &c.; leave for seed, and sow a little for early use. **CHERVIL**, sow. **CHIVES**, divide and plant out. **CLARY**, sow, e. **COMPOSTS**, prepare and turn over. **CORIANDER**, sow. **CORN-SALAD**, sow. **CUCUMBERS**, attend to those forcing; prick and plant out; and sow in hotbeds. **DILL**, sow, m. **DUNG**, prepare for hotbeds. **EARTHING-UP**, perform when necessary. **ENDIVE**, still protect from wet and severe weather. **FENNEL**, sow or plant. **GARLIC**, plant. **HORSE-RADISH**, plant. **JERUSALEM ARTICHOKES**, plant. **KIDNEY BEANS**, sow in succession, &c. Keep a good supply of **EARTHS** in the dry for immediate use. **LEeks**, plant for seed; sow, e. **LETTUCES**, plant out from frames, &c., of the winter standing, towards the end of the month, and sow in the open border. If short of plants, sow in frames on a gentle hotbed at the beginning of the month. **LIQUORICE**, plant and dig up. **MELONS**, plant out for early crops; sow and pot off; attend to this sort of work on a kindly calm afternoon, just before shutting-up time. **MINT**, force, in hotbed; plant. **MUSHROOM-BEDS**, make in succession, and attend to those in bearing. **MUSTARD** and **CRESS**, sow in succession. **ONIONS**, sow main crop towards the middle to the end of the month; also plant for seed, if not done; and plant the Underground or Potato Onion. **PARSNIPS**, take up where left in the ground till now; plant or leave for seed; also sow towards the middle of the month, particularly in light soils. **PARSLEY**, sow. **PEAS**, sowings may be made both of early and second on the same day, where the soil works well, as the one will be found a good succession to the other at picking time; also to suit some unfavourable situations, it is well to sow in frames in small pots, or in sods of turf, which is by some thought best, to plant out when a good season offers; also attend to sticking, earthing-up, and protecting other forward crops. **PENNYROYAL**, plant, e. **POTATOES**, plant in hotbed of any favourite early kinds; this may be done from the first to the end of the month; also plant out during this month all the main crops, if the soil will admit of it, and plant whole sets in preference to cut ones; also look over those in store, often to keep shoots rubbed off. **RADISHES**, attend to (see January), and sow in succession either in border or hotbed. **RAPE** (for salading), sow; (*Edible-rooted*), sow. **RUEBARB**, sow in large pans, or open warm border, and attend to that forcing, either indoors, or cover up with pots, or tubs, and fermenting materials. **SAGE** and **SAVORY**, plant, e. **SALSIFY**, sow, e., in small quantity, for early use. **SAVOYS**, sow, m. and e. **SCORZONERA**, sow, e., in small quantity, for early use. **SEA-KALE**, attend to that forcing; cover up in succession. **SHALOTS**, plant. **SKIRRETS**, sow, e. **SPINACH**, weed, sow, m. **SORRELS**, sow or plant, e. **TANSY**, **THYME**, and **TARRAGON**, plant, e. **TURNIPS**, plant for seed; sow, e. **VACANT GROUND**, dig; weed, &c. There is a right time and a right way of doing everything. Plant out in mild, open weather; wheel out manure, &c. on frosty mornings, or on a fine, dry day; make good use of the hoe on fine, dry days, in stirring among the various crops; look over all in-door stores in rainy weather; and tie the ends of new mats before they are applied to use. T. WEAVER.

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WEEKLY CALENDAR.

		WEATHER NEAR LONDON IN 1853.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.	
M D	D W	FEBRUARY 2—8, 1854.	Barometer.	Thermo. Wind.	Rain in Inches.								
2	Th	PURIF. CANDL. DAY.	30.120—29.062	42—28	N.E.	—	40 a 7	49 a 4	10 54	5	14	2	33
3	F	Podura viridis; buckwheat.	29.715—29.535	39—34	S.E.	—	38	50	morn.	6	14	9	34
4	S	Sphodrus collaris; roots.	29.798—29.521	41—31	N.W.	17	37	52	0 8	②	14	15	35
5	SUN	5 SUNDAY AFTER EPIPHANY.	29.878—29.710	42—32	S.E.	—	35	54	1 20	8	14	20	36
6	M	Staphylinus morio; moss.	29.848—29.685	43—34	N.E.	—	33	50	2 30	9	14	24	37
7	Tu	Omalium planum; bark.	29.521—29.348	45—34	S.	01	31	58	3 38	19	14	27	38
8	W	Byrrhus semistriatus.	29.230—29.062	40—26	S.E.	—	30	v	4 42	11	14	30	39

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 45.3° and 32.6° respectively. The greatest heat, 57°, occurred on the 3rd in 1850; and the lowest cold, 10°, on the 5th in 1830. During the period 94 days were fine, and on 95 rain fell.

It ought to have been stated in the first paper on THE GARDEN PEA (page 314), that much allowance is to be made for trials made during the last season, in consequence of the extremely wet and ungenial state of the weather during the summer months. In favourable summers, the period of growth, that is, the time occupied between the sowing and gathering, is some days less than indicated in those observations; thus, in a warm summer, *Taylor's Prolific*, and *Sangster's Number One*, would have been at least four or five days earlier. We come now to notice one of the most distinct and characteristic Peas in cultivation.

DANECROFT RIVAL.

SYNONYMES.—*Glass Pea*, *Girling's Pea*, *Girling's Danecroft*.

This variety is readily distinguished from all others by the peculiarity of the colour of the whole plant, which, instead of being of a dark or lively greyish-green, is of a pale and sickly-looking yellowish-green, or rather greenish-yellow. This is not occasioned by any unhealthiness or want of vigour in the plant, but from the absence of that secretion which is met with on the leaves of other Peas, or those of Cabbages, and on the fruit of Plums and Grapes, commonly called *bloom*, and which, by some of the learned, is said to be wax, and by others, resin.

The plant is from two-and-a-half to three feet high, of slender habit of growth, and consists of a simple stem. The pods are produced singly, and are from two-and-a-half, to, sometimes, three inches in length, perfectly straight, and terminated abruptly at the end; being in every respect similar to those of *Warner's Emperor*. They contain, on an average, seven peas, but occasionally eight. The ripe seed is white. It was sown on the 5th of April, bloomed on the 5th of June, and on the 14th the blooms dropped, and the slats appeared. On the 2nd of July the pods were quite filled and ready to be gathered. This, though an early Pea, and coming in almost as soon as any of those already described, is not a desirable variety for general cultivation. It is much less productive, and considerably more tender, as the gardener who trusts to it for his first crop will soon discover to his cost and disappointment. It was raised some years ago by Mr. Girling (Girling of Danecroft, near Stowmarket), in the days when there were no *Number One* nor *Emperors*, but now it is not worth cultivating except by the curious.

BECK'S GEM.

This is a real gem—a horticultural gem. It is not above a foot high, and completely covered with pods. For small or private gardens, or for forcing, this will be a most valuable acquisition, as it occupies comparatively little space, and produces as great an abundance of pods as many of the varieties do which require sticks. It is but newly introduced by Messrs. Beck, Henderson, and Co., of the Adelphi, London, from whom I procured it.

The plant is one foot high, of a stout habit of growth for its size, and consists of a very short-jointed stem,

which branches at almost every joint from the base to within three or four of the top, and produces from fourteen to eighteen pods. The pods are almost always in pairs, rarely single, and are produced at every joint, particularly towards the top. They are about three inches long, six-tenths of an inch broad, perfectly straight, somewhat waved on the upper side, and tapering gradually at the point on the under side. They are smooth, and of a dark green colour, plump, and well-filled, containing from five to seven peas, which are as large as those of the *Imperial*, being nine-twentieths, or nearly half-an-inch long, seven-twentieths broad, and the same in thickness. The ripe seed is somewhat ovate, and of a greyish-pearly colour.

The seed was sown on the 5th of April, and the plants bloomed on the 7th of June; on the 12th the blooms began to drop, and the slats appear.

On the 25th the plants ceased blooming, the first pods were ready for gathering on the 2nd of July, and a succession was kept up till the 24th of July, by the same plants.

This is one of the instances which reconciles us to the increase of the number of varieties. But that we may fully appreciate the value of such introduction, our first consideration should be the total extinction of all such varieties as are found to be inferior in value, and, consequently, worthless.

We have now completed what may be called the earliest Peas, and from what we have stated, it will be



seen that there is very little difference as regards the time at which each is ready for gathering. Still, however, although the number enumerated is small, there is room for selection, and for the earliest crop we would recommend either *Taylor's Prolific*, or *Sangster's Number*

One, and *Beck's Gem*. Any of these, if sown in a warm situation early in January, will, if all goes well, produce an abundant crop in the second or third week in May.

R. H.

(To be continued.)

CONTINUING our notes on "The Plants of the Bible," we come next to THE ALMOND.

We are justified in concluding that the ALMOND is not a native of Palestine, because, when Jacob wished a suitable present to be presented to the Egyptian ruler, he desired that *Almonds* might form a part of the gift as being "of the best fruits of the land" (*Gen. xliii. 11*). Now, such fruits are esteemed to be those which require some care in the culture. We should not consider Sloes and Crab Apples "of the best fruits" of England. The Almond grows wild in Barbary, but its fruit is very inferior to that obtained from the cultivated trees in Palestine and other parts of the Levant. In commerce they still retain the name of the *Jordan* Almond, but they are no longer exported hither from the banks of that river, our supply being now chiefly derived from the south of Europe.

The regard and attention paid by the Israelites to this tree and its fruit is strongly evidenced by the various allusions to it made in the Holy Scriptures. These allusions are nearly all, in some mode or other, founded upon the earliness of its blossoms.

Theophrastus, who wrote about three hundred years before the birth of our Saviour, remarks that it was the only tree in Greece which produced its blossoms before its leaves. We all know that such is its habit in our own shrubberies, and that those blossoms are among the earliest that adorn the spring. It was on this account that God employed it as an emblem to denote how speedily his judgments should be executed upon Israel. "Jeremiah, what seest thou?" was God's question to the entranced prophet; and when he replied, "I see a rod of an Almond Tree," God rejoined, "Thou hast well seen, for I will hasten my word to perform it" (*Jerem. i. 11, 12*).

For a similar reason, probably, was Aaron's rod, or official staff, formed of a branch of this tree. It was well calculated to remind its bearer of the promptitude and early devotion to his duties required of him by God. Nor was the lesson less impressive upon the people, for when they saw that the rod budded, blossomed, and bore Almonds in rapid succession, it urged upon them that the good thoughts of the heart, if unchecked, give rapid birth to suitable efforts and results (*Numbers xvii. 8*).

As teaching these lessons—as a symbol that "the best fruits" of our lives and the first thoughts of our hearts should be towards God—Almonds were, perhaps, selected as a happy symbolical form for the bowls of the lamps, or candlesticks, of the Temple. Such offerings of our best and earliest would be a light to the Temple, and upon such offerings would the light of the Temple specially descend.

Lastly, it is elegantly used by Solomon as a symbol of advancing old age, when he says "the Almond Tree shall shed its flowers" (*Ecclesiastes xii. 5*).^{*} Man was justly compared to an Almond Tree, because, as he becomes wise by experience, so this tree becomes more fruitful as it advances in years; a fact well known to the ancients, for Pliny says, "The Almond and the Pear are in their old age most fruitful" (*Nat. Hist. l. xvi. c. 27*). So also is extreme old age as beautifully compared to an Almond Tree casting off its flowers. With us the Almond has pink blossoms, but in the east the flowers are snowy white, and a fitting simile of those white locks the falling off of which has ever been named as a symptom of extreme length of years. It is not only alluded to in our own sonneteers well-known words—

"Time hath thinned my flowing locks,
The few I've left are grey;"

but Anacreon wrote long before from the lands of the East—

"Oft am I by woman told,
Poor Anacreon, thou grow'st old:
Look how thy hairs are falling all!
Poor Anacreon! how they fall."

In the *Malvern* Prize-list for the present year, which announces the Exhibition of that Poultry Society for the 13th and 14th of September next, we find the classes almost entirely confined to Chickens, Dorkings and Bantams being the only exceptions where the seniors are permitted to enter the lists. Considering the time of year at which the birds will have to make their appearance, the limitation to those hatched in the year is certainly a wise restriction, though we are at a loss to understand why Dorkings alone of the larger fowls should be exempt from this arrangement. With four separate classes for Shanghaes, could not the Committee have given one each to the Coloured and White Dorkings? Hardly any two varieties of any breed are less suited for a common class, and we cannot but regret to see it in this instance. A new division, again, of Game Fowls is also proposed, for *Duckwings and Black-breasted* are to go together, the rest in a common medley. We hold this to be a great mistake, for it would be difficult to take any two varieties of the Game Fowls more distinct in feather than the black-breasted "reds" and the Duckwings. But this word "red" is an insertion of our own, for we presume its omission to have been accidental in the list before us, since "black-breasted" is a term by which alone no variety of game or other fowls has yet been distinguished. But what becomes, may we ask, of the remaining "reds," the

^{*} The Septuagint and our version of the Bible interpret it, "The Almond Tree shall flourish;" but Parkinson justly remarks that the Hebrew "never has anything like this meaning elsewhere in the Hebrew Bible."

"gingers," and "streaky-breasted" among others? Surely they should stand with their black-breasted relatives on every account, the position, in fact, which invariably they occupy where the Game Fowls receive the greatest care in the sub division of the various members of their family. If it be said that the heading of Class 8 should have been "*Black-breasted, and other reds, and Duck-wings,*" and that the meaning is apparent, all we reply is, that Secretaries should be more accurate in the correction of their published prize-lists, if they wish to avoid the inconvenience and confusion of which we have very recently had occasion to complain.

The high rate of pen-money, four shillings for each, as also the unusual charge of 10 per cent. on all sales, lead us to imagine that this Exhibition is designed to be self-supporting; and since this is undoubtedly the footing on which the permanent stability of all such institutions should be founded, we shall gladly hear of its success in the present case; and if the number of pens prove somewhat more limited, the counter-balancing effect of the exclusion of much rubbish must be taken into favourable consideration.

In one respect the decision of the Malvern Committee may be followed profitably by those with whom may rest the arrangements for other Poultry Societies during the ensuing season. Two days are wisely fixed for the duration of the Show, a private view being given on the afternoon of the judging-day. The hour, also, for closing on the second day being 6 P.M., a majority of their birds may be on their homeward journey that same evening. Under certain circumstances, where more than ordinary expense is unavoidable, the extension to a third day, as we have often said, may be reasonable; but, beyond this, we reiterate our conviction, that no further period of confinement for the fowls should be permitted. Dead, dying, and sickly specimens, but which had been placed in their several pens in perfect condition and health, have but too often appeared on the opening of the returned baskets, and such must inevitably continue the result of these unduly protracted exhibitions.

The absence of the name of a gentleman (whose triumphs in the Dorking and Spanish classes may be almost termed uninterrupted for the last two seasons) from the list of awards at the late Metropolitan Exhibition is thus to be accounted for. Captain Hornby, indeed, has suffered too severely from the evils we have now spoken of to subject his birds to the eight or nine day's confinement that their appearance at Baker Street must have entailed, and he is, moreover, far from standing alone in this determination, so that a fourth day, we hope and trust, will rarely again mar the pleasure and satisfaction of any Poultry Show whatever.

CULTURE OF TOMATOES.

It happens of necessity that the departmental writers in *THE COTTAGE GARDENER* occasionally cross each other's tracks; this I take to be more contributory to the cause of truth, and the well-clearing-up of questions,

than if each were to observe a most rigid line of demarcation, which would merely produce and spread one set of opinions, in which the unknowing are but too apt to build up a set of cut-and-dry rules, which, however right in themselves, cannot with sufficient pliancy adapt themselves to awkward circumstances. This it is which renders the gardeners of the present day so immeasurably superior to their predecessors; they are compelled to carry out about double the amount of business with the same number of hands, or, as I know in many cases, with a less number, and this cannot, like the vast impetus given to commercial matters in later years, be attributed to the introduction of steam power.

The *Tomato* is an instance of what I urged at the commencement of these remarks; its culture has been written over and over again; but, indeed, of what branch of the gardening art, or of what individual thing within its precincts, may not the same be said? This singular plant is a puzzle, in our fitful climate, in more ways than one. Except in more favoured southern counties, it requires the aid of a wall, and one, too, with a southern aspect; but since the growing increase of our tender Pears, and the still-existing demands for sites on such aspects for our good old fruits of proved character, gardeners find it most difficult,—shall I not say impossible?—to suit all these customers. What, then, may give way? Here is the rub! Who will give up his Moorpark Apricots; his Royal George, Noblesse, and Galande Peaches; his Elruge, Newington, and other Nectarines; to say nothing of Neillis Pears, or the D'Arembergs, Passe Colmars, &c., with a very early Duke Cherry, and several others I could name?

I well remember, that many years since Mr. Loudon quoted some *Tomato* culture in his Magazine, which, at the time, appeared singular, because uncommon. The gist of the plan was the keeping the plants, from year to year, as perennials, or rather, in the language of botanists, as suffruticose shrubs. This, of course, implies that they were kept in a heat congenial to their habits, and they were, indeed, preserved in hot stoves. Fruit was, of course, in use through the whole winter, and, indeed, nearly all the year; and I advert to this fact, merely to show those of our readers, who are not very knowing in horticultural matters, what the real habits of the plant are, and in so doing, lead them to approach as near those conditions as expedients within reach will permit.

The ordinary practice in this country is to treat it as a half-hardy annual; few can afford house room for it, except during the nursing season in a young state, and then its treatment, as to temperature, light, &c., may be lumped with such things as the Capsicums, Chilies, and, if you will, the ridge Cucumbers. But there are a few *special matters* to which I would point, and these deserving of consideration by those who are desirous of enjoying the luxury of good *Tomato* sauce; and to those who are as yet unacquainted with this powerful and peculiar zest, to say nothing of Soyer's fancy *Tomato* dishes, I would say, just try a little really good with a first-rate rump steak when the appetite is thoroughly whetted with several hours' keen exercise.

The first thing I would name, then, is, that those who cannot afford all the necessary appliances of heat, &c., place their plants in such a condition at the beginning of summer as to be ripe for action, that is to say, be so mature in habit as to possess a tendency to blossom rather than a profusion of leaves. To accomplish this, the best plan I am acquainted with is to sow in October.

Strange advice, some of our country cousins will say; and so it is; but let us show why it is expedient. Of course, this pre-supposes the having a house or pit artificially heated to fly to: without that I urge nothing. Sow in October, then, in a plain, loamy soil—manurial matters unknown. The reasons for this strange course

shall appear in their place. When the plants are fit to handle, plant a few in five-inch pots singly, there to endure the winter; when they are about five inches high let the terminal point be pinched—this will bring us to about the second week in November, and by this time the pots will be filled with their fibres; and such being in reality the case, they will be in a position to endure a good deal of dryness, which, as a winter procedure, is essential. And now, until April, all that they need will be a situation in some house, pit, or frame, where they will enjoy from 50° to 55° through the winter, and as much light as can be afforded them.

By the end of this period it will be found, under such treatment, that they are somewhat of what gardeners term a woody character, rather than such a soft, pliant, and watery annual as we too often find them by ordinary culture.

But, be it observed, let them be kept, as to watering, in a niggardly way all this time; they must scarcely be permitted to grow, only to keep the first-formed leaves tolerably fresh. In the axils of those few simple leaves lay the germs of shoots already in a latent way ripe for development, only waiting better skies; perhaps we might, in this case, borrow a phrase from nautical men, and say, "lying-to under bare poles," which may be translated—"waiting in a patient position for favourable circumstances." And if our warm-blooded seamen may be allowed to be occasionally quiescent, surely a gardener may; and if such is followed by a proper course of action it will prove that such plans, although at the moment inexplicable, were not matters of mere whim.

And now we have our little half-shrubby Tomato plants brought to the middle of April, by which time they will be about ten inches in height, and possessing one main stem only, so hard in texture as to require no support, and to stand any breeze. The terminal point should have the first blossoms formed, and the plants should now be well hardened off, keeping them still within some structure, or cold frame, or pit, close to the glass, and where they will enjoy a puff of wind occasionally.

I may here observe, that they should be grown up to this time entirely in a sound loam, not a particle of anything else with it. This I recommend *strenuously*; and I may as well show why. If they were grown in any light mixture rich in humus, they would grow too fast to solidify, they would require watering frequently, and the whole plant would be thrown into a false position. Now, my object is to make the solidification of the stem, &c., keep pace with the growth; and if in strong loam they will go for weeks *without water*; and this it is which makes them such sound plants.

Those who plant them against walls will be enabled to get such plants out about the middle of May; indeed, they must about follow the rules of the "bedding-system," and they should be planted *on the ground-level*, or rather above it. This is most important, in order to avoid over-luxuriance, which is the bane of the Tomato in our climate, nine cases out of ten. As for the soil they are filled up with, that matters little, so that it be rather light; and henceforth their culture is pretty well known. I may here observe, however, that we seldom use shreds in nailing them; we just drive the nail through the centre of the stem—a rough procedure, certainly, but this is rather a benefit than otherwise, as it, doubtless, administers a wholesome degree of punishment to these proud revellers in the damp air of our British skies. If the summer prove congenial, they will, despite these precautions, run too much into a rampant foliage, and this must be occasionally reduced by cutting some of the big leaders half away, and by destroying every sucker and superfluous side-shoot betimes; and in addition, they must have one or two

root-prunings; being in an elevated position, this is easily accomplished by just thrusting down the spade parallel with the wall, at about a foot distance, and cutting through every root. The worst pest, now-a-days, is the Potato fungus: this has taken possession of the Tomato, and no marvel either, being of the same family. There can be little question, I think, about its identity: certain it is, however, that this odd plant has become liable to a pest of the kind; and I have found sulphur a great check to it. I have not half-exhausted the Tomato subject; there are other phases under which to view its culture, and I may have to return to it.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—JANUARY 17, 1854.

We do not expect to see much of gardening at these meetings in the middle of January in any year, and less after so hard a winter as we have just experienced. Nevertheless, we had some rare things to look at and to think about, besides some excellent fruit and flowers. The rarest thing that I have yet seen at the Regent-street Meetings was a bunch of the *Luculia gratissima* in flower; not from the lower ranges of the Himalayas, its native place, but from the open air in Devonshire. Fifteen years back, it was not unusual to meet with this plant, at Christmas, in flower in the stoves about London, not so good-looking as the one from Devonshire, it is true, but still in bloom, and sweeter than a violet; confined heat, or any degree of forcing, except for a month or so when it starts in the spring, being next thing to death to it. This rare experiment was tried, and succeeded, in the garden of J. Luscombe, Esq., of Combe Royal, near Kingsbridge, South Devon. The plant stands out there trained against an east wall. I suppose the wall of the dwelling-house, for there is a fire on the other side of the wall, and the heat from it, was greatly in favour of the *Luculia* outside; in addition to this, "a ragged mat" was placed over it in cold weather; and in the coldest time, when the thermometer was down to zero about London, they placed a frame of rough boards in addition; that was all the protection that this plant ever received there; and here we had a sample from it in bloom in the middle of January. Mr. Luscombe grows Oranges and Lemons against the common walls of his kitchen-garden just with the same kind of protection, and sends up specimens of them every year to the Horticultural Society. In a general way, the *Luculia gratissima* requires the same kind of winter protection and management as the tree Rhododendron; and as it is the sweetest plant in the world, I mean the flowers, and never refuses to bloom in winter when it gets the right treatment, I should like to hear Mr. Fish say all that can be said about it, so as to get it into general cultivation. I once had three dozens of them, and I had orders to pack one, four feet high, in full bloom, for her Majesty, and the Queen is so fond of it, that a stock of it is kept up in the royal gardens ever since.

Mr. Luscombe sent also, from the open air, cut specimens of the old *Linum tigrinum*, one of the very best of all the good old winter flowering plants. When this plant is done well it is little behind the *Allamanda cathartica* in beauty, as was plain enough from a plant sent from the garden of the Society to this meeting. This plant was not quite a yard high, but it was in full bloom all over, and every flower was as broad as a shilling, and as yellow as a butter-cup, and about the same tint. Perhaps I can tell as much about this plant as anybody, for I had once a plant of it as tall as a man, and quite as full of bloom as the one from the Society, and it kept so for full four of the dullest months. The treatment was peculiar, and few gardeners have yet hit

upon it; but here it is. The plant was five years old, and if it had been three times older it would be still finer, for I believe any age under twenty years is young enough for this plant if it is managed properly. First of all, it comes from cuttings as freely as a Geranium, and March is the best time to make them. It cannot endure in-door culture in the height of summer, owing to its liability to the attacks of the red spider; therefore, a cutting struck in the spring, and kept in a damp, hot frame till the middle of May, is then turned into a close, cold pit, where it stands till the beginning of July, and where it is kept very damp all the time to keep the spider at bay. It is then planted out in a very warm, sheltered corner, but not against a south wall. The soil here cannot be made too rich for it, and it must be a light compost; to encourage the roots to the surface, and to create a damp atmosphere round it, a thick layer of fresh moss is placed over the surface as a mulching; and to the end of August, or at all times while the weather is hot, this moss is syringed over, whether the roots need water or not, all this damp being absolutely necessary to save it from the red spider. As soon as the plant begins a fresh growth after being turned out, it is stopped, to cause it to become bushy; ten inches or a foot is long enough before stopping, as the plant is naturally inclined to grow tall in the free soil. A little frost will not hurt it here, but it ought to be taken up early in October, potted, and put in the shade under a mat, for three weeks; by that time it has taken to the pot, and may be set in the greenhouse, or cold pit, till about Christmas, when, if it is intended for a very fine specimen, it ought to be put into a cool stove, say in a heat of from 50° to 60°; here it will ripen the wood made last autumn, and also produce many flowers; and in March it is allowed to get so dry, by degrees, that the leaves droop and fall off, and by the end of the month, or early in April, it is pruned very close, every side-shoot down to the last eye, and a few of the strongest to six or nine inches. It soon pushes again, is then shaken out of the soil, the roots much cut back, is put into the smallest pot that will hold the roots, kept close for a little while, and out again to the close pit, as last season, planted out, taken up, stoved in winter, dried, out, and potted, as before. The third winter it is fit to be seen, and would take no hurt in the drawing-room for two months, or in a cooler place, if needs be; wintering in the stove is not absolutely necessary; but I cannot see how a really superb specimen could be made without it in less than five or six years. Yet it is a hardy greenhouse plant, and it has stood out against a wall in South Devon this hard winter with only a slight protection.

There was a singularly pretty plant from the Society's garden, called *Thysacanthus rutilans*, one of the soft-wooded Acanthads, coming near to the *Justicia* in growth; it might be nearly a yard high; a single stem, as like the old *Justicia coccinea* as anything could be in look and growth; from the top of this, spread out and hang down half-way to the pot, slender flower-spikes, or thyrses, just like long whips of *Russelia juncea*, and these were loaded with the brightest crimson tubular flowers, about twice the size of those of the *Russelia*, and hanging down the same way. At a venture, I should say, that the best way to get this ready for Christmas Shows would be by taking an early spring cutting from a top branch, striking each in a separate pot; good, strong hotbed culture, as long as there was head-room for it; not to be too hasty in shifting, but liquid-manure to make up for pot room, as the plant ought to flower in a number 24-pot as the largest size; to keep the plant very near the glass in strong, moist heat till the end of August; after that, drier and drier by degrees, till a dead stop was put to farther growth; and as soon as the tops of the flower-strings, so to call

them, appeared, heat and moisture to be resumed; at any rate, it is a nice thing, and certainly requires some care in the management to bring it out as perfect as it is capable of being done.

Selago distans is another plant which the Society exhibits every winter, and a better plant of it than the one sent to-day was never seen; not a leaf on it could be seen; it was one mass of pure white spikes, like white Mignonette, if there was such a thing, full four feet across, and not two feet high. I shall not attempt to say how this has been done, for, to tell the truth, I do not know how; but I know that these simple and soft-wooded plants require more daily attention during every stage of growth than the rarest Heaths, and that it is only after many year's close attention to their requirements that any one can excel in their flowering. There is a great deal more care necessary to make a fine pot specimen of a common *Petunia*, or a common *Verbena*, than there is for getting a *Queen Pine-Apple* up to six or seven pounds; but, of course, no one but a gardener is aware of this, and any one but an old gardener, who ventured to say as much, would be hooted out of countenance: it is a fact, for all that. There is nothing like driving at facts, be they ever so common or so unpleasant at the time. I have been hammering for years at the execrable, puny, half-starved, and shameful plants they grow about London, of that most beautiful of all beautiful-leaved plants, when done well, the *Gesnera zebrina*. Some people in the country think that I durst not show my face to London gardeners for my hard sayings; quite the reverse; they are all glad to see me. They know much better than I can tell them when they are behind; but the best of us cannot always be up to the mark in every thing, and it often happens that a soft-headed fellow in the country hits upon a thing by mere chance which puzzles the best brains to find out by the closest experiments and daily toil; and yet there are gardeners, and masters too, who think that it is only necessary to be a gardener for knowing everything that way all at once.

A really well grown specimen of the *Gesnera zebrina* has been cultivated and exhibited from near London at last; we had it here to-day from the Society's garden, four plants in a No. 16 pot, all of the same size and tints in the leaves, about a yard high, and the leaves hanging over the pot, the flower-spikes strong and in full bloom. The great art in growing this plant is to keep all the leaves in full beauty to the very last, whether the plant is tall or dwarf, and as the leaves are so handsome, the taller the plant the more leaves, and consequently the more beauty. A single plant of it, though grown ever so well, does not look nearly so handsome as three, four, or five. I like five best in one pot, the middle one to be a little taller than the rest; but a No. 12-pot would be necessary for such a specimen. The way to make it sure and easiest would be to grow each plant in a separate pot till the flower-bud appeared, then to put the five in one large pot at once, either keeping the tallest for the middle, or planting the other four a little deeper. Another advantage of growing them in single pots to this stage is, that if they are a little too long in the legs you can plant them so deep in the big pots as to bring down the leaves to the very edge of the pot at once; but in that case the big pot should not be filled up with the compost at once, only a little now and then, just as the new roots from below, or from the naked stems, filled the last earthing up; the way they often do with forced Kidney Beans.

The finest sight I ever saw of these *Zebrinas* was last year with Mr. Barley, the gardener at Newnham Courtney, near Oxford; he had a whole house full of them just set for bloom, and in their large pots, as here described, and there was not a single bad leaf in the house; the darker-leaved variety, and the one called

Herbertii, with a greener leaf, were never seen more perfectly to differ from the ordinary kind. There were six kinds of *Corraas*—*speciosa*, *Goodii*, *picta*, and *picta superba*, *curiosa*, and something else, all like so many Fuchsias in bloom. A fine plant of *Acacia linifolia*, one of the earliest and the best to make a close specimen of the whole family, with a brilliant *Epacris*, called *ardentissima*; all from the same collection.

Mr. Jackson, of Kingston, my next door neighbour, sent three beautiful *Orchids*, for which he got a smart prize; the newest of them was a strong plant of *Warrea Lindeniana*, a ground Orchid, from somewhere about the Spanish Main, on the north-east side of South America, where it was discovered by Mr. Linden, a foreigner, after whom it is called. It had a flower-spike above two feet long, quite upright, and carrying fifteen or sixteen flowers, which are all of a creamy colour, except the lip, which is of a rich reddish-purple. It seems to be as fit for winter work as the old *Phaius grandiflorus*, and requires exactly the same treatment, so that it is everybody's plant who has heat at command. The second was a large mass of *Barkeria Skinnerii major*, the dark crimson variety; this, and the older light crimson *Skinnerii*, have been in bloom with him all this winter, hanging in dozens, from close to the roof glass along the whole north side of the Mexican, or cool house, where I often go to see them on purpose, and am quite sure that all these *Barkerias* are much easier to grow and to keep than fancy *Geraniums*; and that the reason why some gardeners fail with *spectabilis*, is by giving it too much heat; it should never be above 60° any day in the year, if it could be kept so low; a cool greenhouse is much too hot for it in summer. When Mr. Skinner first sent it home, he said it ought to be out-of-doors all summer, hanging from a tree over a brook, or pond; and a pupil of mine, who knew this, is the only one who has yet brought it out in full perfection; I mean Mr. Brewster, gardener to Mrs. Wray, at Cheltenham. It seems to me that the very rare *Barkeria elegans* is just like it, and I know that the least over-heating will tumble it heels over head. They have a large stock of it at Kingston; and one fine plant coming into flower, I was very anxious they would get ready for this show, but I warned them about the degree of heat it could stand. Who would take heed to what an old gardener could know about Orchids, however. Not they, indeed! So this lovely Orchid was put into the Calcutta-house to get it up in time for the meeting. Mark the result: every one of the flower-buds dropped off the third or fourth day; and, as I told them, it served them just right enough; but as they have plenty of it, I hope we shall see one at the next meeting, or at some one of these meetings in the spring. The third was a good bluish variety of the *Lycaste Skinnerii*, a plant that runs into a great number of shades and sizes in the flower and footstalks.

Talking of the next meeting reminds me that we were promised a sight of the wonder of the age at that meeting—that is, drawings and dried specimens of the largest tree on the face of the earth—a bigger tree than the Boabab itself, and as tall as four of it, if reports are true. This is quite a new thing, and is called after the first Duke of Wellington, *Wellingtonia gigantea*, a kind of conifer, an evergreen, and as hardy as the Scotch Pine. Mr. Lobb brought home seeds of it lately to Mr. Veitch from far away in the mountains above California; seedlings of it are up, and doing as well as can be expected. I saw two or three of the cones, and I am quite satisfied that no other Conifer cones in the same way. The nearest that I could liken it to was a little abortive cone, which a friend brought me from the old Cedar trees on Lebanon. We had just a glimpse of a small drawing of this *Wellingtonia* at the Meeting, with a likeness of a man under it, to show the relative heights.

but I should not like to be made a picture of for such a purpose when I was full grown, for the huge tree makes the man look no bigger than Tom Thumb.

There was a large assortment of *Salad plants*, as good as any family could wish for, from Celery to French Sorrel, from the Society's garden, but they still keep to the French names, and for Lettuce you have a name like *latitude*; and Sorrel is *Gazelle*, or some such confounded name, and so on until you forget the very names of the commonest things you ever planted, parted, or sowed the seeds of: and all this nonsense for no other earthly purpose but to make believe that the things are new to all the world, except the world of this Society.

PEARS.—Of these there were abundance of winter desert ones, and not one of them fit for the table, except *Ne plus Meuris*, just turning colour, a most awkward Pear to dish well, and not very tempting to look at, but a most delicious Pear when you break into it, if it is in the right state; a most easy tree to manage, as it grows stubby, and a good, sure bearer.

PINE APPLES.—Of these we had only one, and that from one of the best Pine growers in England, Mr. Jones, gardener to Lady Charlotte Guest, Dowlais, Glamorganshire. It was a *Queen* Pine, with a very small crown, as Mr. Fleming grows them, who told me, last summer, that the only secret in having small crowns is to keep air on the pits all night throughout the year. This *Queen* was only 3 lb. 7 oz., but it was grown as an experiment, and sent to London to shew the result of that experiment. It was as fine of that size as ever was seen; it was grown in a 10-inch pot, to keep the plant small, and economise space, and peat was the compost. Now, if Mr. Jones can cut a hundred pounds of *Queen* Pines from a pit that would only produce eighty or ninety pounds of seven-pounders, his plan is by far the more economical; and a party of eighteen to dinner seldom eat a three-pound *Queen* at one dessert, as these *Queens* are much larger than black Pines of the same weight.

STRAWBERRIES.—There was a nice dish of forced *Black Prince*, from Mr. Brown, gardener to J. Darnell, Esq., of Waltham Abbey, Essex. I believe this is the only Strawberry that could be thus managed, except, perhaps, the red *Alpine*, as they force them in France.

GRAPES.—They, at least some of them, were splendid for this season. There was one dish of the *Muscat of Alexandria*, from Mr. George Wortley, of Norwood, the best I have yet seen in January—every berry was as full and shining as when it began to change colour last September. The usual way is to see them beginning to shrivel and turning into raisins at this season. Mr. Forbes, at the Duke of Bedford's, sent six bunches of very beautiful *Black Hambro's*, three of them being the crop of 1853 kept back, and three from the first crop of 1854, that is, the earliest and the latest crop, and were it not that green leaves were on the spurs accompanying the new Grapes, one could hardly make out which was which. The *Black St. Peter's* were never in better bloom, or fuller in the berry, in January, than were these *Hambro's*. Mr. Forbes must certainly have some secret method in keeping the *Black Hambro's* so late in such plump condition, and Mr. Wortley, gardener to Mrs. Maubert, of Norwood, has hold of this secret, else his *Muscats* could not come in an equally good full condition. In the ordinary process, all that gardeners can do for the preservation of their late Grapes is to stir the borders, and give a good drenching to the roots just as the berries begin to turn colour in the autumn; after that, the house inside, and the roots inside and outside, are kept as dry as can be.

There was a *Scotch Fir*, nine or ten feet high, all the way from Edinburgh, to show how well it did after being transplanted by the patent machine invented by Mr. MacGlashen; and there were several letters from

gardeners about Edinburgh, and in different parts of the country, many of whom I know personally, and from all these, and from what I had heard last summer, it appears that Mr. MacGlashen's machines are in high repute in the north, and that thousands of trees and shrubs have been transplanted by them with the greatest success, but, somehow or other, we in England do not seem to value them half so much as they do; but I have no doubt, when we have seen more of them in use here, we shall like them better and use them.

D. BEATON.

LISYANTHUS RUSSELLIANUS.

THIS splendid *Gentianwort*, producing its large bell-like flowers in panicles at the end of the shoot, was introduced by Mr. Drummond, from Texas, nearly twenty years ago, and yet, with the exception of a few successful growers, it is even now very seldom seen in collections. Like many other plants rarely met with, it is by no means difficult to manage when the minutiae of its culture are, or can be, attended to; but whatever care be given, if these minutiae are neglected failure is sure to be the result. The two most successful growers I have met with are Mr. Cuthill, of Camberwell, and Mr. W. Thompson, of Wrotham Park. From the latter gentleman I received a plant and some seeds some ten years ago, and I grew it with very fair success for several seasons, and only got out of it from two causes. The first was, that from the quantity of things required, the plants did not receive the necessary attention when young; and the second was, that at that time having no plant-stove, I found that although the plants bloomed well in a greenhouse not over airy, that yet a closer and warmer atmosphere was necessary for the ripening of the seeds. In fact, my greenhouse-saved seeds would not vegetate.

When grown from seed the plant must be treated as a biennial. The seeds should be sown in pans, or pots, half-filled with drainage, then filled with equal portions of loam, leaf-mould, heath soil, and a portion of silver sand, sifting it so as to have three degrees of fineness—the roughest going over the drainage, the next in roughness over that, and the finest on the surface. Press that down level, and if not moderately moist, water, or dip the pot in a pail of water, until all is moistened, and allow to drain thoroughly for twenty-four hours in a warm place. Smooth the surface again by scattering previously, if necessary, a little of the finer compost over it, so that nothing will adhere to the pressing board; then sow the seeds; scatter very lightly a little silver sand over them, and press gently again. The month of March, or the beginning of April, is a good time for sowing, as the plants will just be in nice size for standing the following winter. The previous soaking, and then draining of the soil, will prevent the necessity of watering much before the plants are fairly up, and one source of disappointment will thus be avoided, as wet foliage they much dislike, especially when young. When the seeds are thus sown, cover the pot with a square of glass, or a bell-glass—the first is the best, as extra moisture will more easily escape—and cover that again with a piece of paper, so as to shade the seeds until they are fairly up. The best place for the seeds is any shaded place commanding an average temperature of from 70° to 75°, such as being plunged in a cucumber or melon-bed will give. When the seeds are up substitute a thin piece of paper for a thick one; but do not do away with the shade until the plants have got several healthy leaves, then the glass should be removed, and the thin paper, or other shade, continued a little longer, inuring them to more light by degrees. In watering, let the spout of the pot rest

against the side of the pan, so as to moisten the soil without wetting the plants. A better plan is to have a vessel of water, between 70° and 80° in temperature, and to hold the pot or pan in it within a quarter-of-an-inch of its rim, and thus, through the hole in the bottom, the water will rise, until you see the first symptoms of moistness on the surface, when the pot should be set where it can drain freely. The same plan would prevent myriads of delicate seedlings fogging or damping-off, as they now frequently do.

By Midsummer the plants will be large enough to pot singly in three-inch or four-inch pots, using soil similar to that mentioned above, with the addition of some small pieces of charcoal, to assist drainage; and these little plants should be again transferred to a close frame or pit; if they can be plunged in a mild bottom-heat, all the better. They will need shading from the sun for the first fortnight, and should be inured to more light and air by degrees, so that the young shoots be somewhat consolidated before autumn. If the leader seems to run away, it should have its point nipped out when four inches in length, that a sufficiency of shoots may be obtained, as at the end of good strong healthy shoots the panicles of bloom will be produced the following year. During the latter part of September, and the first part of October, the plants should have all the light possible, and as much air as would not unduly depress the temperature.

It will frequently be found, that a few side-shoots, two or three inches in length, may be removed from a young plant, or even from one showing and coming into bloom. These, taken off close to the stem, a few of the lower leaves removed and inserted in pure sand, above sandy loam, covered with a bell-glass, and placed in a sweet bottom-heat, will strike root, and when potted off will require just the same treatment as seedlings. In a packet of seed there will often be various shades of purple, and the spot at the base of the flowers will be brighter on some plants than upon others, and, in this case, cuttings are the readiest means for securing a superior variety. So far as my own practice extended, plants from cuttings bloomed equally freely with plants from seed, but were less luxuriant; the shoots producing their panicles when half the length of the shoots from seedlings.

The wintering of the young stubby plants is an important affair. After being well exposed in autumn, they should be moved by the middle of October into a warm greenhouse, a cool stove, or an intermediate house. The position should be dry rather than moist, and the plants should stand pretty near the glass, as near as would not subject them to sudden changes of temperature. The heat should hardly be long below 45°, and seldom for any length of time below 50°; they will enjoy 5° or 10° more with air. From this time in October, until the beginning of March, the plants must not flag, but they must not have more water than will keep them from doing so. If the bottom of the pots stood for an inch in damp sand or moss it would be an advantage. If water *must* be given above, avoid damping the stems or foliage. This will be easier guarded against if, in potting, the collar of the young plant is well elevated in the centre of the pot. During the whole of this period the syringe should never touch them. The drier the stem and foliage the better the plants will like it. This is just one reason why a person may grow a dozen or two more successfully than one. In the latter case, the spout of the pot and the syringe do the mischief before it is thought about. Green fly is apt to make its appearance, especially at this stage; and in fumigating with tobacco the fumes should be *weak* and *cool*, giving two or three weak doses instead of one strong one.

If by the first of March your plants are healthy,

stubby, and but little lengthened since last October, you have managed admirably. They must now get a start for blooming. Those who wish to gain a year, will, no doubt, find plants at Camberwell ready to begin with. Any forcing house or pit will do, where they can receive from 5° to 10° higher temperature.

If the pots could be plunged in a nice, sweet bottom heat, so that the roots would be 5° or 10° in advance of the top, the plant would thank you for it. The roots have been as stationary as the shoots during the winter; it is advisable to give them the first start. Whenever the roots are freely pushing out fresh fibres the plants must get a larger shift, and this may be done on the *successive*, or the *one shift*, system. An eight or ten-inch pot will grow a middling specimen. On the *successive* mode, giving two or three shifts by the month of May, there is less danger from over watering. On the *one-shift* mode, the soil should increase in roughness as you near the sides of the pot; a portion of charcoal should be incorporated, the whole well pressed, and water so judiciously given that the soil near the sides of the pot should never be wet, though moistish, until the roots begin to occupy it. With this attention as to watering, the *one-shift* system will involve, upon the whole, least trouble, and may often be used with great advantage with all plants grown only for that season. Whatever mode be adopted, though not absolutely necessary, yet, if the pots can be plunged so as to command a more equal, and a few degrees higher, temperature than the branches, it will be an advantage to the plant until the end of May. During this period, though air be given, yet a closish atmosphere should be secured to encourage growth. In June, the plants should have more air, and rather full exposure to light. After fresh growth in the head of the plant commenced the shoots should be tied out, and care taken to have them equal in strength. When growth is proceeding rapidly, not only will more water be necessary, but after the greater light and air that the plants receive in June, which will hasten the flowering process, they may have weak manure-waterings alternately with the clear. As the heat of summer advances the plants should have more air. Under such treatment, August and September will be their chief flowering months, opening their first buds towards the end of July. When in this condition, after being inured to the change gradually, they make fine ornaments for the parlour or the greenhouse; but as already stated, the seed cannot be depended on unless it is ripened in a higher temperature. It may also be noted, that unless the temperature be warm, and the position have plenty of light, the flowers will neither open so well nor have so good a colour.

I so forget the matter in Mr. Cuthill's monograph, that I do not know whether he describes a more royal, easier road to success than the above; the chief points of which, before they were reduced to practice by myself, were communicated to me by Mr. Thompson, many years ago.

R. FISH.

THE CYCLAMEN.

A CORRESPONDENT has made inquiry how to improve our present race of Cyclamens, especially the more hardy kinds, such as *C. coum*, *C. Europeanum*, and *C. hederifolium*. As the subject requires some space—rather more than is given to replies in general to correspondents in their proper place—and as those plants are decidedly pretty gems when in bloom, and universally admired, I will answer the query for the benefit not only of the querist but for our readers generally.

The common Cyclamen grows wild on the hill sides of the south of Europe, and is so plentiful that the pigs feed upon the roots or bulbs—hence our English name,

Soubread. The *C. coum* is found at a considerable elevation on the Alps, where it is protected from the severe frost by the snow. When the warm days of spring partially melt the snow, this little plant may be seen with its beautiful deep pink blossom peeping through the white robe of the earth.

Thus hardy are the Cyclamens; and yet how many fail to grow and flower them well; and the reason, as I believe, is because the pure Alpine air, and the cool shelter of the snow, is not sufficiently attended to in their cultivation. On the contrary, as soon as they are out of bloom they are placed in some out-of-the-way place, perhaps under the drip of trees exposed to heavy rains, and saturated with wet while they last, and afterwards suffering from extreme drought, and the ravages of slugs and other vermin concealed amongst and under the pots. The wonder is that any are left alive under such unfavourable treatment.

To remedy this, I will try briefly to describe the proper culture, and shall divide the subject into—1st, Propagation; 2nd, Soil; 3rd, Potting; and 4th, Summer and Winter Treatment.

1st, *Propagation*.—All the species must be propagated by seed. The bulbs are solid—that is, they have no coats like the Onion, or the Hyacinth, and they do not send forth any offsets like the solid bulb of the Crocus, or the Gladiolus. If a bulb of this latter is cut in two they will rot, and, consequently, perish, and so will that of the Cyclamen, and, therefore, they must be propagated by seed. The seed itself is very perishable and will not grow if kept too long; hence it must be sown as soon as it is ripe, which may be known by its changing colour and bursting the seed vessel. Sow it thinly in the compost I shall describe presently, in a wide, shallow pot, or pan, covering it about a quarter-of-an-inch; give a gentle watering, and place the pan in a cold frame. The greenhouse kinds may be placed on a shelf near the glass, but shaded from the mid-day sun; here they may remain till they come up, care being taken to keep the soil moderately moist by sprinkling it occasionally with water from a fine-rosed watering pot. By no means flood it, or pour the water on heavily, for if that is practised the seed will be washed bare and perish. Some of them may come up soon, but the greater part will remain under the soil till the spring. In this position they should remain until all grow, and then increase the quantity of water, but only just sufficient to thoroughly moisten it, withholding it then until the soil is moderately dry again. The beautiful single little seed-leaves will increase in size during the growing season, and each will form a small, tiny bulb. Towards the end of June the leaves will begin to turn brown and decay; then they must be allowed to go to rest, by giving no more water. Keep them in the pan, placing it in a cool place so contrived that no heavy rains can fall upon it. Towards the autumn they will begin to grow again, and as soon as that is observed stir the surface of the soil, clearing it of moss and lichens or weeds. Then put a thin coating of fresh soil on the surface, and water it to settle it close upon the small bulbs, which should not be covered too deep. I prefer keeping the young bulbs the second year in the same pan, because the first season they are so very small that there is danger of a considerable number being lost, if the attempt is made to transplant them, or take them up when a year old. Keep the soil again, during the second season, properly moistened, and when the leaves decay, allow them again to go to rest. When the season of growth arrives, then keep a watch upon them, and as soon as the least signs of growth are apparent provide a sufficient number of thumb-pots, the smallest size made, drain them well, and fill them with the compost, then carefully, with a flat, sharp stick, take up a bulb, and place it in the middle of the pot, leaving the upper part of it just

above the soil. If there are any living roots, preserve, if possible, every one of them. Proceed, bulb by bulb, till all are potted; then give a good watering, and place the pots upon a thick bed of coal-ashes, in a cool frame. Protect them during the winter from frost, giving air on all favourable occasions. Towards spring they will have made three or four leaves, and the pots will be found full of roots. A shift into a larger-sized pot will then be necessary, and will encourage the bulbs to increase in size very materially. I have even shifted them twice in the season with the best effect. By this close attention to re-potting, and a due supply of water, the bulbs will have increased to such a size that many of them will flower; and, in such species as are apt to sport, will reward the cultivator, very probably, with some improved varieties. T. APPLEBY.

(To be continued.)

WOODS AND FORESTS.

(Continued from page 301.)

Planting.—It has been said that "whoever fells a tree ought to plant a hundred," and, like most other old sayings, this is not only a wise one, even applied to the owner of woods for his own interest, but also is but honest to his posterity and the succeeding generations. If it is the duty of a private individual to replant his woods whenever he falls any quantity of timber, it surely is more especially the duty of the government of any country to replace any trees that it may be necessary, either for use as timber, or on account of age, to apply the axe to the root. And this remark applies with still greater force to the government of this country, inasmuch as timber for ship-building is so necessary for our grand national means of defence. Our greatest statesmen have always paid considerable attention to this point of political economy, and so greatly has its wisdom been pressed upon the attention of the legislature, that a commission has for many years been appointed to watch over and manage the forests belonging to the nation. Public attention has been lately drawn to this important duty of government by the press, and we may hope that the business of planting will now be carried on with spirit and in the best possible manner. Having made these few prefatory remarks, I shall now endeavour to describe the best mode of planting a track of land with timber trees. I have already alluded to the preparation of the ground by draining and digging, or otherwise making the ground ready for the trees. The first point to consider is, what kind of trees will grow best upon the space to be planted. If there is a fair depth of soil, then, by all means, plant it with that most valuable of all timber trees, the Oak, mixing them with some kind of Fir-trees, as nurses to shelter and draw them up for a few years. Very lately, I visited the seat of the Duke of Portland, at Welbeck Abbey, in Nottinghamshire, and had the pleasure of walking through the Oak plantations on that estate. This venerable nobleman is more than fourscore years old, and has, during his long life, been an energetic planter of this noble tree the Oak. I noted large labels on each plantation, on which is painted very legibly the date of each plantation, so that the rate of growth may be observed at once. They are planted (or sown I could not learn which) on ridges, or rather long beds. The younger ones stand thick on the beds, but are regularly thinned as they require it; but such as have been growing since 1834, the oldest date I came across, are now quite thin, with clean, straight poles, really beautiful specimens. In such a favourable soil and situation there is no need of nurses, neither have any been planted, but in less favoured spots they will be found

advantageous. The Oak will grow in almost any soil not actually wet or very much exposed.

In ground considerably elevated, or on hill sides, when the soil is thin, then let the Larch be the tree intended to make timber, mixing it with the Scotch Fir, the Birch, or the Beech, as nurses. In low, wet grounds, which cannot be drained, the *Willow*, the *Poplar*, and the *Alder*, should be planted, mixed with a few ashes, and the *Balm of Gilead*, *Spruce*, or *Silver Fir*, these to be planted on raised mounds. Indeed, the whole of these trees planted on such ground should be planted on ridges, the soil dug out to form the ridges being thrown upon them to elevate the ground above the water level, and increase the bed of soil for them to grow in. In positions near the sea-coast, such plants as will bear the breeze should be planted nearest to the water to shelter those further inland from the salt spray. The common Alder is one that bears the sea blast as well as any. If ever that beautiful tree, the *Araucaria imbricata* becomes common, it will be an excellent sea-side tree; for, as I remarked in my account of Badorgan, lately, there it is quite healthy and uninjured, though planted within a few yards of the sea-shore.

On the tops of our highest hills, the only way to get up a young plantation will be to plant it with the hardest of trees, and that thickly, so that they may shelter each other. I noticed, lately, on some of the highest hills of Lancashire and Yorkshire, plantations of some extent, and there the hardy Scotch Fir, the Larch, and the Birch, have managed to stand the blasts, but the reason why they had not made much progress was, in my opinion, because the spaces planted are too small and isolated; yet I observed some in the centre of each plot that had made considerable more progress than the outside, showing, evidently, that larger plantations, even on such bleak positions, would, in time, shelter each other, and such barren spots would be then covered with thriving timber trees.

T. APPLEBY.

(To be continued.)

TEMPORARY HOTBEDS.

THE season having now arrived in which forcing of all kinds will be going on with great activity, the careful cultivator will often have his inventive powers put to the test, in order to ensure to everything that degree of warmth and shelter which is so essential to its well being; for, in many cases, the number of frames and other conveniences are not sufficient for the requirements of the season, that some "make shifts" have to be called into action, while, at the same time, every inch of glass is supposed to be hard at work as well. Now, though it would be idle to say that any substitute for a glass covering is as good as glass itself, yet many contrivances might be adopted which would either hasten on, or shelter, productions of a kind not too tender. For instance, *Potatoes* that were planted on a hotbed in December, might, by-and-by, have the frame taken away from them; the second crop, especially, might be made to dispense with such a luxury, and some frame-work of some kind or other erected which would admit of being covered up with some frost-proof material; while, at the same time, other beds might be made, and the *Potatoes* planted, which it would be unnecessary to humour with a glass covering at all if that material be wanted elsewhere.

Let us suppose that tree leaves, or dung, or both, exist in sufficient quantity to have a frame or two built with. Then, with this fermenting material, when in due order (according to directions so often given), let a sort of hotbed be made of any required length, but it

had better not be more than five or six feet wide; the height of three feet will probably do at this season. When this is done, procure some deals or rough slabs, and fix them edge-ways up all around the top of it, securing them at the corners to each other; and, if necessary, at one or two places in the middle, partition pins might be laid across, acting in the capacity of tie beams, by the sides being fastened to them. This being done, some contrivance must also be adopted with a view to support the covering that will be necessary to put upon this bed; one of the best being a waterproof oil cloth, or something that way, to support which a rail had better be carried along the centre, about two feet higher than the tops of these boards; this rail to be secured by posts driven into the bed, &c., and, if necessary, short pieces might be laid from the sides to it, in the manner of the rafters of a building, and it will easily be seen that over this, mats, or any other covering of that kind, might easily be thrown at any time.

From this it will easily be seen that a great amount of exposure must take place when light is wanted, consequently, very tender products must not be expected to thrive here; but, in fact, such delicate things as *Cucumbers*, and many other tender seedlings, ought to have some more suitable place, but as a succession of young *Potatoes* is no less necessary than *Cucumbers*, and a handful of *Radishes* a month or so before their natural season out-of-doors is often as much esteemed as a handful of flowers, it follows that any easy means of obtaining these must be worth the little labour they cost. Young *Carrots*, too, are esteemed a luxury at a season when the old ones are no longer palatable, and, by a similar contrivance to the above, their presence may be commanded some time before those in the open air come into use, and, what is equally important, in quite as good a condition as these are when of the same size.

If no preparations have been made by the amateur by the time these pages will reach him in the way of making such beds, no time must now be lost, and let the soil be at once put on, and the seed sown, or if for *Potatoes*, let them be planted: it is not much advantage to have them in the growing condition, which they often are prior to putting into a frame closely covered with glass, for in this latter case the warmth and shelter afforded is sufficient to maintain them in that growing state in which they have been before their final planting; whereas, to take up *Potatoes* which have made some progress from a warm floor, or bed, and remove them out-of-doors to where the only heat they have is a little at the bottom, subjects them to a check, which throws them farther back than those not started at all; however, a little sprouting at the eyes will do no harm, and in planting such make-shift beds it is advisable to use larger *Potatoes* for seed than for out-door planting generally.

When circumstances will admit of it, great advantage accrues from having the soil required for such beds in as dry and mellow a condition as possible; this may easily be effected when there are means for that purpose, as shed room, &c. It is also proper to observe that a very rich soil is not absolutely necessary for the purpose, although it must not be a poor or exhausted one, and for the *Carrots* a considerable quantity of sand, or other opening matter ought to be added, for this root is not benefited by much dung or other enriching substance of that kind. *Radishes* may be treated more liberally, perhaps, but the principal agents of success are in other causes, and one of the most important is the total seclusion of that cold harsh air so baneful to vegetation in the spring. If this can be accomplished without shutting out entirely light from the plant, then the object is gained; but as that cannot well be effected without glass, means must be taken to partially admit

the light, while a part of the covering remains on, or rather while some temporary covering is taking the place of the principal one. Oiled calico will do better than a dark body, or paper similarly prepared will answer equally well, only is not so durable, and requires a stretching frame, or something that way to support it on; but these things will easily suggest themselves to the operator; suffice it here to say, that anything that will admit the light, and check the coldness of the atmosphere, when the east wind is parching everything up, must be beneficial; only let it be borne in mind, that in as far as *Radishes* are concerned, a larger space of full exposure must be made, otherwise the plant will be nothing but top, or, what is equally bad, a long, useless neck. *Carrots* are more hardy, and as the seed is a long time in germinating, it is not necessary for the bed to have much light during the early part of this process; however, they must have light before they make their appearance, otherwise they will lack that robust sturdiness so necessary to their well-being afterwards.

It is almost needless pointing out the many purposes to which such beds may be adapted. A patch of *Cauliflower* and *Lettuce* seed, sown in such a place, furnishes plants long before the same kinds could be had in the ordinary way of out-door sowing; and it not unfrequently happens that the stock of autumn-sown of these things suffers much in a severe winter like the present; hence the necessity of replacing as many as possible. I may also observe, that *French Beans* do very well on a bed so treated, only they must be somewhat later, as their tropical origin ill fits them to endure the cold blasts so common in our springs; but of this I may probably speak hereafter. Nevertheless, many things might be sown here which are wanted in small quantities; and a little later, such a bed will be famous for raising annual flowers to plant out in the parterre and elsewhere; in fact, the uses of such a bed are manifold; and as the season is at hand wherein every inch of glass will be hard at work in the rearing and protecting things more tender or valuable, it behoves the careful cultivator to make the most of the means at his disposal; and if the common objects can be effected in a homely way, the mode in which that is done reflects more credit upon him than when a more expensive system has been at work; and as many residences in the vicinity of London can command hot stable-dung in any quantity, and as many country places abound in leaves in an almost equally unlimitable extent, I advise each party to adopt a free use of each material; for whatever may be the merits of hot-water pipes and tanks, even when arranged in the most complete way, the day has not yet arrived when the old-fashioned dung-bed has to be driven out of use; although, in every fresh invention of the iron-and-water system, a threat is held out that the doom of all fermenting materials is sealed; but, somehow, the dung-bed yet rears its humble head annually in the back grounds as of yore; and though it would be unjust to affirm its produce in every respect came as early as that furnished by a well-regulated system of hot-water or other mode of applying fire-heat, yet it is much to be questioned whether any mode is more congenial to vegetation when that does show itself. And the results of horticultural shows in the summer months present as many good examples of Melon culture under the old-fashioned system as under the new, and the aspect of the foliage of things growing there fully corroborates that view—of course, taking the management into consideration likewise. But as far as that is concerned, the management of a plant, when luxuriating in the genial warmth conveyed by well-prepared fermenting materials, is an easy matter when the top or foliage of the plant is allowed to partake likewise of its exhilarating influence; but in the description of rough, half-exposed, beds, which this chapter has been devoted to, the kindly influence of

a nice genial heat has to be neutralized by frequent, full exposures to an atmosphere not the most agreeable to vegetation in a dormant state, let alone that of a highly excited kind. Nevertheless, this anomaly is partly got over by beginning in time, and a sort of sturdiness of top is attained when good management and attention are put in force.

J. ROBSON.

THE MANAGEMENT OF LONG-WOOLLED EWES AND LAMBS.

(Continued from page 323.)

UNDER the second head of the subject, I propose to consider the rearing of stock Lambs for grazing at a future period, as well as for keeping up the numerical strength of the flock. In breeding Lambs for sale as grazing stock, we must regard, in some measure, the requirements of the graziers as well as the profit of the breeder. It often happens, that in situations where the soil and climate is suitable, that a portion of the Ewes are purchased every year, and the produce in Lambs sold as stock; in this case, with any of the varieties of the Long-woolled Ewes, it is the best plan to use the Down Tup for the purpose of rearing the first cross to be sold to the graziers, and for this object it will be found that no cross is so good as that obtained from the Hampshire Down breed. The mixture of this blood with that of the Long-woolled varieties effects a great improvement in the value of the stock; this cross not only making a great weight of mutton at a given age, but producing it of improved quality, as compared with the pure Long-woolled breeds,—the latter being, generally, somewhat deficient in lean meat, whereas the former will exhibit a well-combined proportion of both fat and flesh. It is from this circumstance that the cross-bred animals are more in request by the purveyor, and that they often realize in the live market a price very little below that of pure-bred Down sheep.

In stock flocks, where the object is to continue a particular breed of sheep, and to replenish the flock, after the annual sale of the old Ewes, by reserving the greater portion of Ewe Lambs, it is advisable to adhere as much as possible to distinctness of character and purity of blood. And in making a selection of Rams, and sometimes of a few Ewes also, I recommend that the origin of the flock should be carefully ascertained; and if it is traced to the same blood as that which it is intended to maintain, so much the better, if care and judgment has been displayed in the stock from which the choice is made; for I am of opinion, that breeding in-and-in (as it is called) is not objectionable, care being taken to procure, as a change, animals of the same blood, from different localities, where the difference of soil and situation will exercise a beneficial influence upon the constitution. I would further observe, that it is better to select Rams of the best quality from your own flock rather than take them from others of doubtful origin. It is well-known that parties have continued to breed from the same flock for upwards of fifty years without intermixture, and with great success; but this is evidently a matter of skill, and requires vigilant

attention, for it may be safely said, that in the case of many flocks now pampered by excessive feeding, for the purposes of exhibition, &c., if they were to be treated in the same manner, without a change by selection from other flocks, although managed with great judgment in other respects, great degeneracy, with weakness of constitution, would be the inevitable result.

In the department of Sheep farming called stock-breeding, it is necessary to consider the soil and locality; and generally, the thinnest soils, the most hilly, and the most exposed, are chosen for the purposes of keeping breeding Ewes; these conditions of soil and climate being unfavourable to the profitable production of fat stock. I do not propose to repeat the details of management necessary for a breeding flock, which I have previously gone into, and which will be found in the article on the treatment of Down Ewes, in No. 277 of THE COTTAGE GARDENER. In conclusion, I beg to express the conviction that the method of management there set forth, if fairly carried out, will be found quite sufficient, under ordinary circumstances, to ensure successful results.

JOSEPH BLUNDELL.

THE FATTING OF SHEEP.

OF all the branches of farming economy and the practical management of land, the fattening of Sheep is one of the most important; and when it is considered how many influences are in operation, in connection with this subject, it may well be said, that to make it profitable and successful at the present day, requires all the service that scientific attainment can render, and all the advantages which can be derived from practical knowledge and diligent application.

The fattening of Sheep in first-rate style, when conducted upon the modern and improved method, embraces a wide range of conditions, some of which are the kind of Sheep, and their age; the nature of the soil, its situation and aspect; the varieties of food, both natural and artificial; their cost and method of application; the influence of climate; the season of the year; and the rotation or system of cropping the land. All these, with others, which will pass under consideration during the treatment of this subject, must be received as necessary auxiliaries in the process, and all conducive, although varying in degree, to the success of the system. The first question to be asked is, Is our soil of the condition, staple, and quality, adopted to the fattening of Sheep? If not, it would be far better to keep a stock flock in preference to a grazing one, or else to appropriate the produce for a different purpose.

In the same degree that warmth is necessary to animals fattening under cover, in the like manner is shelter desirable to grazing Sheep in open-field-feeding; and as I propose to apportion a space in this paper to the consideration of the house-feeding of Sheep, I therefore intend my observations, in general, to apply to the method of fattening Sheep in the open field. I must, however, here observe, that although the advantage of moveable sheds for the Sheep to lie in during the winter

months, whilst feeding on Turnips, would be very great, yet we have no plan at present designed whereby we can gain by the shelter afforded, without being subject to the serious drawback of an accumulation, or unequal distribution of the manure. Any attempt at artificial protection, or shelter for Sheep, which induces them to collect together, has, moreover, the further disadvantage of propagating the foot lameness, which is of great moment at the present period, whilst there is so great a tendency in flocks to this disease. Could these difficulties be avoided, and shelter be afforded to the stock at a moderate cost, farmers would no doubt gladly avail themselves of the benefit.

The most important point is, no doubt, the selection of stock suitable to our soil, climate, and kind of food. In the northern and midland counties the Long-woolled breeds of Sheep greatly predominate; and hitherto it must be admitted that they have been considered best adapted to the profitable consumption of green crops, whether Grass or Turnips; but the plan of crossing with the Down is increasing rapidly, and this mixed breed is coming into favour with both grazier and consumer. This fact I hold to be the forerunner of another change, and that is the use of the Down breed of Sheep for fattening, in preference to the Long-woolled or cross breeds. The Hampshire Down breed of Sheep being not only well established as the best for profitable fattening, but reckoned the best adapted to the soil and climate of the southern, eastern, and south-western counties, the question then arises, what is the essential difference of soil and climate between these two districts, calling them the northern and southern, which should induce a preference? We have no more hardy breed amongst the Long-woolled tribes than the Hampshire; nor is the former to be preferred to the latter, for early maturity, or the profitable consumption of farm produce.

I am, therefore, inclined to think, that either breed must stand upon its own merit for fattening purposes, and in a great measure separate and apart from the influence of soil, particularly in the absence of any decided experiments proving the contrary. These observations apply more particularly to the winter-feeding upon roots, &c., for I am ready to admit that the Long-woolled Sheep would give the most profit in feeding the grass upon deep rich soils in the summer months, being of quieter habits.

JOSEPH BLUNDELL.

(To be continued.)

BANTAMS AS RECENTLY SHOWN.

THE farther we recede from the strictly profitable breeds of poultry, the more arbitrary becomes the standard by which those that remain must receive the verdict of the "fancier;" an expression especially suited to the diminutive race on which we now design to offer a few remarks arising from their public appearance during the past year. Excellence for the table, and a prolific character as layers, are rightly valued as counter-balancing certain deficiencies in form or feather, when we discuss the competing merits of economical poultry; and we have ever been of the number of those who think that in every question connected with

the poultry-yard, "*comparative cost and produce*" must be the main ground on which the claims of the various races must be founded. But with "bantams," form and feather are the sole points to receive attention; for few, if any, of their most ardent admirers would class them among the profitable fowls.

Now, taking them in the order in which they come before us in the catalogues of our various exhibitions, let us first ask whether the *Gold-laced* birds that have been shown during the past twelve months have been generally equal or superior to those of previous years? Our own observation would lead us, at once, to reply in the negative to this inquiry, and this opinion is based on a careful review of the majority of the principal exhibitions.

In very many instances the specimens have evidently been "*bred out*;" lacing has first become irregular, and at last spotty, till some birds, shown, too, with sanguine expectation in this class, appeared as bad representatives of the spangled variety. Few judges have been occupied, we imagine, for any great length of time before the pens of this section of the Bantam family; for wherever fair specimens have been present, their position has been at once assigned, and we have no hesitation in expressing our belief that, generally speaking, at least four out of every five pens were in no position to claim the honour of any token of commendation whatever. But though this may be admitted as the fact, it will be worth our while briefly to advert to the probable causes of this decline, which, though we cannot hope to throw any fresh light on the experience of many who have long studied this variety, may yet prove serviceable to the long list of those whose various circumstances enable them to gratify their taste for poultry only in the class before us.

Thus we may ask what has been the per centage of laced Bantam chicken hatched from the eggs of really good birds during the past year? Some of our friends, who have set hundreds, would answer, barely one per cent.; and though we will not insist on so low an average, we doubt whether any much higher rate could be proved, at least where the parent-birds, as before said, were really good specimens as judged by the recognized standard.

Comparing this with the healthy and numerous broods that other Bantams, Silver and Gold alone excepted, continue to produce, we must arrive at the conclusion, that in the selection of the parents of this variety we require certain features adverse to the vigorous and perfect propagation of their race; and at once, when we turn to the prize pen, the square henny tail, and the absence of both hackle and saddle feathers in the cock, points manifestly to the cause of their unfertile character. We are, in fact, breeding from birds selected especially from their non-possession of the universal gallinaceous characteristics of the male sex. Add to this continuous breeding-in-and-in, from the difficulty of procuring fresh blood good enough, as it is thought, to mix with favourite and long-cherished strains, and we have more than sufficient reason fully to account for the present depreciation. But we might also allude to another influence, which will avail for our present purpose so far as it is considered that the laced Bantam "*originated*" with the late Sir John Sebright, being the result of his careful selection and continued experiments with other varieties of this family. If this supposition be correct, the result we now witness would be in strict analogical concurrence with all that takes place, under similar circumstances, in the rest of the animal kingdom. The peculiar form and character thus arrived at would inevitably wear itself out, in a longer or a shorter space, according to the greater or less difficulty of obtaining fresh birds that might help to reproduce the same points that first distinguished the variety. But we must not linger on this part of our subject, for a disquisition on the origin of the Sebright Bantam has no place in the present paper, where we merely propose to inquire into the fact of their assumed degeneracy.

An imperfect state of the organs of generation being in fowls commonly co-existent with the partial assumption of the plumage of the other sex, we have a ready clue to a cause which would account for the usual unfertile character of the Sebright egg, and thence, going a step further, the degeneracy of their progeny in the comparatively few instances in which they do prove productive.

But putting this line of argument aside, another practice might be quoted as likely to tend to the loss of the cherished points of the laced Bantam's excellence. Late-hatched chickens of the year are very generally successful at exhibitions, a majority of prizes frequently falling to their share at six and seven months old. From prize birds it is often hastily concluded that prize chickens are most probably to be bred, and immature parents are consequently selected, producing chickens that either in form, or feather, or, perhaps, in both, must constantly evidence the want of judgment in such a choice. The mature bird, on the other hand, when at two or three years old the plumage has somewhat suffered in regularity, or colour, where, for instance, the abhorrent "*kite-wing*" has been developed, would have been far more likely to have thrown chickens that would have contributed to their owner's reputation.

The foregoing remarks apply equally to both the "gold" and "silver" varieties; both of these, indeed, as occasionally happens with Polands of the same colour, being hatched from eggs laid by the same parents. But to the deficiencies in the former birds, we have to add in the latter a tendency to coarseness and excess of size to which the others are not equally subject. This has been apparent for some years, and we see no reason to alter our opinion from those that have been lately exhibited. The clear silver tone, moreover, has too generally degenerated into a dull yellowish-white, or tended, on the other, to a light shade of bay.

Our readers need not be reminded that in penning these remarks many very beautiful specimens would plead exemption to the general opinion. We feel obliged to pronounce that Bantams have rather retrograded than otherwise during the past year; for there have certainly been instances where the occupants of pens would, perhaps, have borne comparison with the best of former days; but these have occurred but seldom, and when present have the more confirmed us in our low estimate of the beauty of their companions. We believe, also, that if there has been no improvement on a comparison of very recent times, the downward course of the laced Bantams would be still more apparent when contrasted with a period of fifteen or twenty years since; and that "*they are not what they were*," would here be a more just application of that remark than in most cases in which we hear it used.

(To be continued.)

THE GENUS ANÆCTOCHILUS.

If there is a genus of plants that merits our attention, and excites a particular admiration more than another, it is certainly that of *Anæctochilus*. Since the introduction of *Setaceus*, the first species from the island of Ceylon, no other plant surpasses the rich and splendid colour of its leaves. It is for peculiarity, that this and the allied genus, *Physurus*, have become so celebrated with cultivators. Unfortunately, however, the cultivation of these rare plants has been, and still is considered to be, very difficult by amateurs, so much so, indeed, that few of them have, hitherto, made the attempt, although they must regret the loss of such acquisition from their collections.

This last summer, however, I observed, at the exhibitions at the Chiswick gardens, that the whole collection of *Anæctochilus* had been grown in a splendid state of culture, and also that they, by their extreme beauty, attracted the attention of visitors very much. Those plants, particularly favoured by nature, were never seen, perhaps, in so flourishing a state, but more commonly in a weak, wretched condition. Those exhibited, however, told plainly that there are means by which amateurs may enjoy these rare and magnificent beauties of nature. When I stood admiring these plants, I did not believe that their culture could be surpassed by any degree of skill. Some time afterwards, however, when on a visit to the Royal Botanic Gardens, at Kew, my attention was suddenly arrested by a rich collection of *Anæctochilus*, of which all the species surpassed, by far, those which I had seen at the Chiswick exhibition.

The foreman of the propagating department, Mr. Hannemann, was the grower of these extraordinary plants, and he very kindly communicated to me the means by which he brought these plants to such admired perfection. Being

convinced that this knowledge would be of great use and pleasure to many amateurs, and wishing, at the same time, to contribute something to the embellishment of our hot-house, I subjoin a statement of the manner by which Mr. Hannemann's essays have been crowned with success. The compost he uses is one-third rough-chopped peat, one-third sand, and one-third chopped sphagnum (moss); to that compost is added a handful of horn, crushed to powder, and a few pieces of charcoal, to each pot. The plant is lightly potted in that compost, the pot is then plunged in another pot of a larger size, and the interval between the two pots is filled up with sphagnum, and on this outer pot a bell-glass is placed to secure the plant, which thus soon recovers from the effects of repotting. In this way the leaves, which constitute the only beauty of the plant, have room enough to spread themselves out on all sides. But the great secret of growing these plants to the utmost perfection seems to be in keeping the sphagnum, or moss, which covers both pots, in a free-growing state all the year round, and as our native moss from the woods must be used, it is forced to grow so much, that the surface of the pots must be as regularly gone over as the best-managed lawn or piece of grass, to keep down the luxuriant growth which the heat, damp, and confined air are always stimulating. At the nursery of Mr. Jackson and Son, in Kingston, where this treatment has also been adopted, and where it is found to answer beyond their sanguine expectation, the Orchid grower, Mr. Davidson, keeps pans of living sphagnum growing in the house, on purpose to have some of it near him when he wants to repair any failure on the pots under the glasses, and for potting these plants at any season. Neither Mr. Davidson nor his kind employers make a secret of the ways they find best to manage the rare plants, for which they are to be much praised. Another thing which they have discovered in the process of growing the *Anæctochilus* family is very curious, and most useful to know, which is, that the bell-glasses never require to be wiped, as, no matter how long they are in use over these plants, if the sphagnum is kept alive there is no mouldiness or any green slime ever seen on the inside of the glass, as is seen to be the case with glasses which are used over cuttings or seeds in the ordinary way. The reason for this constant cleanliness inside the glass, they believe to be, that the sphagnum consumes all the damp vapours which must rise from the gradual decomposition of the different parts composing the mixture in which the plants and sphagnum are growing. When these damp vapours are loaded with the impurities from the compost, and when it is not so consumed, as it is not in the pots of cuttings, it is so troublesome to the propagator, by soiling the inside of his glasses, that he must have recourse to wiping them with a dry cloth every day, or very often, or else the mouldiness would soon spread, and involve his cuttings in ruin.

Mr. Davidson has been trying experiments, this winter, on purpose to prove how far the pure air, and cleanliness inside these glasses over the *Anæctochili*, may assist cuttings of rare plants to make roots more speedily than under glasses, without sphagnum, on the old system; and as far as we can yet judge, there is cause to believe that the living sphagnum is the greatest help to the propagator that has yet been discovered. Besides this, they have already proved to demonstration that the whole race of these most beautiful-leaved plants which require bell-glasses to be kept over them, cannot be grown with any degree of success if the moss or sphagnum is dead about them, and, no doubt, the purifying influence of the living sphagnum, as is proved by the cuttings, is the chief reason why the *Anæctochili* do so much better that way than on the older plan, with all the sphagnum dead and rotting about them, so as to make the air too impure for a lively growth in such confined space as that covered by a bell-glass. Without glasses it is not possible to imitate the natural conditions under which these plants are found; they form part of the vegetation which is capable of enduring the deep shades of trees and shrubs, and they are constantly surrounded by other low-growing plants of similar constitution, where neither sun or wind affect them much, so that they are always in a still, damp, hot, shaded atmosphere, which we can imitate only by the use of bell-glasses. We have also proved that liquid-manure from guano and other sources will excite them to

superior growth. Keeping them from flowering causes the same result; but this requires great judgment, as plants have been killed by the sudden decay of the stalks of the flowers; the safest way is not to take off but one flower-bud at one time, and that after the stalk is grown the full length, and so one bud after another, for a week, and then to cut off the flower-stem when it naturally begins to die; thus the leaves will receive all the nourishment which the flowers would have consumed.

Although the hottest temperature of our stoves would perfectly suit them, they content themselves, nevertheless, with a much lower temperature, like other hothouse plants, and then the watering must be comparatively diminished.

In Ceylon, and, likely, also in the other islands where they grow, the natives name them King of the Forest, and that with great propriety, although they grow so low on the ground among plants of like habit as the sphagnum of our own woods; and, certainly, the sphagnum agrees with them best, and with many cuttings as well, when it is surrounding them in a living, growing state. Therefore, it is very probable that the use of live moss or sphagnum will shortly be much extended in the propagating-house for many other purposes besides that of growing the living genus under consideration; or, failing that, I shall be happy if my account of what is now proved about the use of live moss, will be of use, or add to the pleasure of the English amateur, to whom, and to all with whom I have become acquainted in England, I owe my sincere gratitude for liberality and kindness.—H. G. HAACK.

[The author of the above original and interesting communication is a young student from Germany, who is over here for the sole purpose of learning our language, and our ways of doing business in the nursery trade, in order to qualify himself for superintending the British and American branches of that trade at home. How far he has made use of his means, may be judged of from this communication, when I say, from personal knowledge, that he could not speak a word of English this time last year.—D. BEATON.]

POULTRY SHOWS.

LIVERPOOL GRAND POULTRY SHOW.—This Show took place on the 18th and 19th of January, and though, from the vicinity of Knowsley, and the fact that many good breeders of poultry reside in that neighbourhood, we had been prepared for a good display, we confess the reality far exceeded our expectations, and we have no hesitation in saying (and we heard the Judges express the same opinion), that (*numbers considered*) it was the very best Show that has ever yet been held, there being scarcely a bad bird there. That the number of entries should not have exceeded 357, is a matter of surprise to us; but it was a first attempt so well carried out, however, that we venture to predict, that with a little judicious increase to the prize-lists, the next Liverpool Poultry Show will be second to none in the kingdom.

This Show was held in Mr. Lucas' Carriage Repository, which had undergone such alterations and improvements as left nothing to be desired in light, ventilation, accommodation, and effect, and testified to the "good taste," as well as energy, of the Working Committee.

The *Spanish*, which was a good class, consisted of 29 pens. It proved a walk-over for Captain Hornby, who with two beautiful pens (which we fancied were not his Birmingham birds, but *new faces* at a show) took 1st and 2nd prizes in the adult class, as well as 1st in the chickens, the 2nd prize going to a pen belonging to Mr. Hardy, of Warrington.

The *Coloured Dorkings* were pronounced by the Judges to be "highly meritorious," and well, indeed, they deserved the praise. The 1st and 2nd prizes for aged birds went to the Knowsley pens; and those for chickens to two beautiful lots belonging to Mrs. Townley Parker and Capt. Hornby. The commendations were numerous and well-merited.

Of *White Dorkings* we need only say, they were a moderate class, and shown in scarcely "moderate" condition.

Class 7, for adult *Cochin-China* (cinnamon and buff), produced only eight entries, but they were good birds, and

in much better condition than has lately too often been the case. Mrs. Stowe taking the 1st prize, while the 2nd went to a pen belonging to Mr. Mitchell.

Class 8 must have given some little trouble to the Judges, as it contained 50 pens of much more than average merit. Mr. Harrison obtained the 1st prize, the 2nd being awarded to Capt. Hornby, for a pen scarcely inferior, in which, by-the-by, was one pullet quite the best in the Show.

Class 9, *Brown and Partridge-coloured*, was very moderate, but was redeemed by its follower Class 10, in which Mr. Archer, of Malvern, took 1st prize with an excellent and very heavy pen, the 2nd going to Mr. Job for a good lot.

In Class 11, *White Cochins*, only one entry, and the prize was withheld on account of *green legs*; but Class 12 was one of much more than average merit, Mr. Rawson most deservedly taking 1st prize, and Mr. Job the 2nd.

The *Black Cochins* were not in great force, and we observed, as is so general, coloured feathers in the cocks.

Of the *Malays* we cannot speak with "high commendation;" but must record our tribute of praise to the *Game*, which in all classes were much to be admired. More difficulty, however, might have attended the awards, had more attention been paid by their owners to proper arrangements, and had they remembered that in a *prize pen* the birds should match in *colours of legs* as well as other things. We saw good pens put "*hors de combat*," from the cock having yellow, and the hens white, legs, &c. For the various prizes in these, as well as the *Hamburgh* classes, which were of good average merit, we must refer our readers to the prize list.

Of all the *Poland* classes we cannot speak too highly. They possessed great merit, and were much admired. Mr. Beesley, Mr. Conyers, and Mr. Baker, received 1st prizes for their birds, and well-deserved them.

The *Bantams* had their usual crowd of fair admirers; Mr. Moss and Mr. Rawson showing some first-rate pens.

The *Geese* were well represented; the 1st and 2nd prizes being awarded to Mr. Townley Parker. There was not a pen in the class which was not fairly entitled to a prize, but the prize pens, especially the 1st, defied all competition. They were in beautiful order. We subjoin their weights as we heard them reported—gander, 23 lbs. 9 oz.; goose, 26 lbs. 14 oz.; goose, 21 lbs. 10 oz.—or 72 lbs. 1 oz. the pen.

The *Aylesbury Ducks* deserved great praise. The 1st prize in these went to a pair of Mr. Rawson's, which, if we mistake not, were successfully exhibited at Gloucester, but (we regret to add) in very different condition from their present state. The 2nd prize went to a good pen of Mr. Weston's.

The *Rouens* were shown in good condition, and were a good class. The prize-takers were Mr. Pearse and Mr. Worrall.

Class 42, for *Ducks of any variety*, brought twelve good pens to the post, the winners being Mr. Dixon, for East India Blacks, and Mr. Bird, with some beautiful Call Ducks.

The *Turkeys* bring us to the end of the list, and, like the *Geese*, possessed very great merit. The 1st prize was awarded to Mr. Conyers, whose Turkey cock was almost the finest we ever saw. Mr. Neilson took the 2nd prize with a pen scarcely inferior, as well as an extra 1st prize for "purity of blood," to a singularly good pen of wild American *Turkies*, which, from their condition and beauty of feather, were the objects of general admiration.

Every care and attention was paid to the feeding of the birds, and the courtesy and civility of every official connected with the Show ought not to be passed over. To Mr. Gilbert Moss is chiefly due the credit of originating and carrying-out so successfully the first Liverpool Poultry Show, and we sincerely congratulate him on the result of his exertions, arduous as we know they have been.

The Judges were Mr. Baily, of London, and Mr. Hewitt, of Birmingham, and their judgments gave general satisfaction.

A correspondent, and very excellent judge of Poultry, writes to us as follows:—"I consider the exhibition-room at the Liverpool Show one of the best adapted for the purpose I have yet seen, being well-lighted, and the ventilation of a very superior character indeed,—the latter being a necessary acquisition, when looked upon in connection with either the health of the poultry, or even the convenience of visitors,

and too generally *entirely* overlooked in the arrangements of a Poultry Show. The extreme cleanliness that pervaded every section of the Show reflects infinite credit on the Committee; and the result, in a pecuniary point of view, is a convincing test it was duly appreciated by the public, the attendance including almost every family of distinction in the county. I by no means expected to meet with so many first-rate specimens at Liverpool, and with pleasure do I acknowledge my belief that so general an amount of first-class birds have but rarely competed, while the influx of indifferent ones was unusually limited: a sufficient proof that the selection by exhibitors themselves improves steadily and satisfactorily. In *Game* fowls, however, this remark is inapplicable, many of decidedly superior pens being properly disqualified from the fact of yellow, black, and white legs being all exhibited together. The *Spanish*, coloured *Dorkings*, buff *Cochins*, *Game* (of all kinds), *Hamburghs* and *Polands* (of each variety), were excellent. In *Geese*, however, and *Turkeys*, it was evident the Judges had not a sinecure task, for the competition was, perhaps, the best yet witnessed; and such was the surpassingly beautiful pen of *Wild American Turkeys*, that belonged to John B. Neilson, of Doe Park, Woolton, near Liverpool, that an extra first prize was awarded them; and the *Aylesbury Ducks* were a very liberal and unusually good class. The first prize pen of *Rouen Ducks* were as true to feather as the most fastidious amateur could desire; but I long to see the weights approaching more nearly such as were, year after year, effected at Birmingham (varying from twenty-six to thirty-four pounds the set of four), for certainly great size (if combined with purity of breed) is quite a desideratum. There is no cause for doubting, a very few seasons will find Liverpool possessing an exhibition of poultry second only to Birmingham, and I hope that the Committee will meet with well-merited success."

Class 1.—*SPANISH*.—Cock and two Hens.—1. First prize, Capt. William Windham Hornby, Knowsley Cottage, Prescott. 3. Second prize, Mrs. Windham Hornby, Knowsley Cottage, Prescott. Class 2.—Cock and two Pullets.—26. First prize, Captain Windham Hornby, Knowsley Cottage, Prescott. Hatched Feb. 1st., 1853. 13. Second prize, Mr. John Wilmott Hardy, Warrington. The cockerel hatched early in May; the pullets on May 20.

Class 3.—*DORKING* (Coloured).—Cock and two Hens.—33. First prize, Captain Windham Hornby, Knowsley Cottage, Prescott. 41. Second prize, Mrs. Windham Hornby, Knowsley Cottage, Prescott. (The whole class meritorious.) Class 4.—Cock and two Pullets.—47. First prize, Mrs. Katharine Townley Parker, Astley Hall, Chorley. Hatched 15th of April. 61. Second prize, Captain Windham Hornby, Knowsley Cottage, Prescott. Hatched 16th of April.

Class 5.—*DORKING* (White).—Cock and two Hens.—70. First prize, Mr. Joseph Jenners, Moseley, Birmingham. 72. Second prize, Mr. George Fell, Warrington. Class 6.—Cock and two Pullets.—75. First prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. Hatched May, 1853. 73. Second prize, Mr. R. Gibson, Hooley, near Crawley, Surrey. Seven months old.

Class 7.—*COCHIN-CHINA* (Cinnamon and Buff).—Cock and two Hens.—77. First prize, Mrs. Lydia C. Stowe, Bredon, near Tewkesbury, Worcestershire. 76. Second prize, Mr. William Mitchell, Keighley. Class 8.—Cock and two Pullets.—107. First prize, Mr. John Harrison, jun., Snelston Hall, near Ashbourn. Hatched middle of April. 117. Second prize, Captain Windham Hornby, Knowsley Cottage, Prescott. Hatched March 24th, 1853.

Class 9.—*COCHIN-CHINA* (Brown, and Partridge-feathered).—Cock and two Hens.—135. First prize, Mr. Joseph Hindson, Breck Road, Everton. 134. Second prize, Mr. Charles Leigh Clare, Hindley House, Liverpool. Class 10.—Cock and two Pullets.—146. First prize, Mr. Edward Archer, Great Malvern. Cock and hen hatched March 25th; other hen February 16th, 1853. 141. Second prize, Mr. Samuel Job, Holmefield House, Aigburgh. Hatched 13th July, 1853.

Class 12.—*COCHIN-CHINA* (White).—Cock and two Pullets.—155. First prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. Hatched April, 1853. 153. Second prize, Mr. Samuel Job, Holmefield House, Aigburgh. Hatched on the 9th of August, 1853.

Class 13.—*COCHIN-CHINA* (Black).—Cock and two Hens.—159. First prize, Mr. Howard B. Fox, New Ferry.

Class 15.—*MALAY*.—Cock and two Hens.—162. First prize, Mr. Thos. S. Trapp, Bedford. Class 16.—Cock and two Pullets.—166. First prize, Mr. Thos. S. Trapp, Bedford. Hatched in June.

Class 17.—*GAME FOWL* (White and Piles).—Cock and two Hens.—168. First prize, Mr. James Monsey, Ber-street, Norwich. 169. Second prize, Mr. Francis S. Bullock, Hawthorn House, Handsworth. Class 18.—Cock and two Pullets.—170. Second prize, Mr. James Monsey, Ber-street, Norwich. Six months old.

Class 19.—*GAME FOWL* (Black-breasted and other Reds).—Cock and two Hens.—191. First prize, Mr. Abraham Turner, Thornton Grange, Cheshire. 175. Second prize, Mr. William Cox, Brailsford Hall, near Derby. (Whole class commended.) Class 20.—Cock and two Pullets.—

189. First prize, Mr. James Monsey, Ber-street, Norwich. Age, six months. 188. Second prize, Mr. William Cox, Brailsford Hall, near Derby. Hatched April 10th.

Class 21.—*GAME FOWL* (Blacks and Brassy-winged, Greys and Blues).—Cock and two Hens.—202. First prize, Mr. Theed William Pearce, Bromham Road, Bedford. (Ducking Game.) Age: cock seven months; pullets eight months. 196. Second prize, Mr. James Dixon, Bradford. Class 22.—Cock and two Pullets.—206. First prize, Mr. Edwin L. Bullock, Handsworth, Staffordshire. Hatched June 30th. 207. Second prize, Mr. Samuel Taylor Smith, Park Lane, Madeley. Age, nine months.

Class 23.—*GOLDEN-FENCILLED HAMBURGH*.—Cock and two Hens.—209. First prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. 208. Second prize, Mr. Henry Worrall, Knotty Ash House, Liverpool. Class 24.—Cock and two Pullets.—214. First prize, Mr. Josiah B. Chune, Coalbrookdale, Shropshire. Age, seven months.

Class 25.—*GOLDEN-SPANGLED HAMBURGH*.—Cock and two Hens.—221. First prize, Mr. George Fell, Warrington, Lancashire. Age, about one year and eight months. 219. Second prize, Mr. Thomas West, Eccleston, near St. Helens. Class 26.—Cock and two Pullets.—225. First prize, Mr. James Dixon, Bradford. 230. Second prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. Hatched April, 1853.

Class 27.—*SILVER-FENCILLED HAMBURGH*.—Cock and two Hens.—234. First prize, Mr. William Mitchell, Keighley. Class 28.—Cock and two Pullets.—239. First prize, Mr. William Mitchell, Keighley. 240. Second prize, Mr. James Dixon, Bradford.

Class 29.—*SILVER-SPANGLED HAMBURGH*.—Cock and two Hens.—247. First prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. 245. Second prize, Mr. William Mitchell, Keighley. Class 30.—Cock and two Pullets.—249. First prize, Mr. William Mitchell, Keighley. 252. Second prize, Mr. Edward Alison, jun., Park Hall, Chorley, Lancashire. Age, seven months.

Class 31.—*POLAND FOWL* (Black, with White Crests).—Cock and two Hens.—264. First prize, Mr. Thomas Beesley, Eccleston Lane Ends, near Prescott. Hatched in June, 1853. 260. Second prize, Mr. Joseph Conyers, 42, Boar Lane, Leeds. (Whole class meritorious.)

Class 32.—*POLAND FOWL* (Golden).—Cock and two Hens.—273. First prize, Mr. Joseph Conyers, 42, Boar Lane, Leeds. 267. Second prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. (Class highly meritorious.)

Class 33.—*POLAND FOWL* (Silver).—Cock and two Hens.—280. First prize, Mr. S. T. Baker, Manor House, King's Road, Chelsea. 282. Second prize, Mr. James F. Greenall, Grappendall Hall, Warrington. (Class highly meritorious.)

Class 34.—*BANTAMS* (Gold-laced).—Cock and two Hens.—290. First prize, Mr. Gilbert W. Moss, Liverpool. 293. Second prize, Mr. C. Rawson, The Hurst, Walton-on-Thames.

Class 35.—*BANTAMS* (Silver-laced).—295. First prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. 298. Second prize, Mr. C. Rawson, The Hurst, Walton-on-Thames.

Class 36.—*BANTAMS* (White).—Cock and two Hens.—300. First prize, Master R. M. Brocklebank, Ansley, Aigburgh.

Class 37.—*BANTAMS* (Black).—Cock and two Hens.—304. First prize, Mr. Gilbert W. Moss, Liverpool. Chickens of 1853. 302. Second prize, Mr. Joseph Conyers, 42, Boar Lane, Leeds.

Class 39.—*GEESSE*.—Gander and two Geese.—307. First prize, Mrs. Katharine Townley Parker, Astley Hall, Chorley. 316. Second prize, Mrs. Katharine Townley Parker, Astley Hall, Chorley.

Class 40.—*DUCKS* (White Aylesbury).—Drake and two Ducks.—326. First prize, Mr. C. Rawson, The Hurst, Walton-on-Thames. 330. Second prize, Mr. John Weston, sen., Aylesbury, Buckinghamshire. (Class highly meritorious.)

Class 41.—*DUCKS* (Rouen).—Drake and two Ducks.—335. First prize, Mr. Theed W. Pearce, Bromham Road, Bedford. 337. Second prize, Mr. Henry Worrall, Knotty Ash House, Liverpool.

Class 42.—*DUCKS* (Any other variety).—Drake and two Ducks.—338. First prize, Mr. James Dixon, Bradford. (East India Black.) 339. Second prize, Mr. Lambert John Bird, Litherland Mount, Litherland, near Liverpool. (Decoy or Call.)

Class 44.—*TURKEYS*.—Turkey Cock and two Hens.—353. First prize, Joseph Conyers, 42, Boar Lane, Leeds. (Cambridgeshire.) Weight of the three birds, 68lbs. 350. Second prize, Mr. John B. Neilson, Doe Park, Woolton, near Liverpool. (American.) Extra first prize for Purity of Breed.—357. Mr. John B. Neilson, Doe Park, Woolton, near Liverpool. (Wild American.)

DEVON AND CORNWALL POULTRY ASSOCIATION'S FIRST EXHIBITION.—This Society had their first show at St. George's Hall, Stonehouse, on the 18th and 19th of the present month, on which occasion 243 pens were entered for competition. This number would, probably, have been considerably exceeded, had it not been for the accidental collision, in respect of time, with the Torquay Exhibition, held in the previous week, and also from what we must consider the unwise determination of the committee to confine the entries to residents in Cornwall and Devon. If the general improvement of our poultry-yards be the object of such Associations, it is manifest that such limitations must be prejudicial to success, for the wider the sphere of their operations, the greater probability is there of bringing together the best specimens of every breed; and another year we shall hope to number such restrictive

regulations among the rules that have been once for all abolished and done away with.

Class 1 included *Coloured Dorkings*, young and old; chickens here, as in the other breeds, competing with the adult birds. This class, as has been the case throughout the more western districts of England, was certainly below an average, for it could not be said to contain one really good pen. The first prize was awarded to Mr. W. C. Hodge, for No. 3, where there were two fair hens, but the cock had a sprigged comb, almost amounting to a "cup." Mr. E. Burton, of Truro, had the second prize, and Mr. W. W. Rowe's birds were commended. No *White Dorkings* were shown, though one pen had been entered.

Spanish, again, were below an average. To No. 10, belonging to Mr. B. Kingdon, an even pen of tolerable birds was assigned the first place, while No. 17 followed with specimens of a similar character, the property of Mr. B. Ford. Mr. W. W. Rowe had a commendation for No. 12, which contained the best bird (a pullet) of the entire class.

Of *Cinnamon and Buff Shanghaes* there were thirty-three pens, all possessing more or less of merit. Mr. W. J. Lawrence headed the list of awards with the same birds that lately won for him the like position at Penzance; Mr. Channing having the second prize for No. 34. No. 23 and 25, belonging to Mr. S. C. Parkhouse, were deservedly commended, as also was Mr. Channing, for No. 33. To pens 48, belonging to the Misses Coryton, of Pentlie Castle, and 44, to Mr. W. C. Pennington, of Penzance, high commendations were awarded.

Five pens of *Brown and Partridge Shanghaes* were exhibited, but the class was indifferent. Miss K. Buller took the first prize, though the cock was a decided *Cinnamon* bird. Mr. B. Ford came second, with No. 55, in which the cock was too stilty a specimen.

Next were nine pens of *Black and White Shanghaes*, shown together, and forming but an unequal class. The first prize was here given to Mr. E. Burton, for No. 60, containing white birds, certainly the best in the class. The second prize to Mr. J. Turner, for No. 63, with black birds, of which the cock was indifferently booted, and had, moreover, a drooping comb. Mr. J. Turner was also commended for some very good white birds, in No. 56. The cock in 62 was not pure black, and still less so were the occupants of No. 64.

In *Malays*, Mr. Hunt walked over the course with a very good pen.

Red Game were inferior specimens, consequently the first prize was withheld, while Mr. M. Charlton took the second with a pair of good dark-legged hens, but an inferior yellow-legged cock. The best pen in the room belonged to Mr. Dent, but too late an entry had disqualified it from competition. *Grey Game* had six entries, of which Mr. J. W. Little's No. 75, had the first prize, and Mr. J. F. Mortimer, the second; the latter pen was hardly inferior, except, perhaps, in the male bird.

In *Game*, any other variety, we found nine entries, of which several exhibited strange combinations of various breeds; thus, No. 79 had evidently been crossed with Golden Polands, and almost all the rest had a strain of Malay, or the coarse Indian Game blood. Mr. P. O. Treby's Piles took the first prize.

Silver-pencilled Hamburgs were mostly second rate. The first prize, here, fell to No. 89, belonging to the Misses Coryton, the second to Mr. W. W. Rowe.

In *Golden-pencilled Hamburgs* we found the winners in pen 103, the property of the Rev. H. V. L. Hammond; next to which came Mrs. B. Ford's, No. 102. Mr. Hine was commended for No. 101. These, on the whole, were a better class than the preceding.

There was no first prize in *Silver-spangled Hamburgs*, but the second was given to Mr. Paul, No. 106.

In the *Golden-spangled* Mr. A. Paul had the first prize; Mr. H. Hine the second.

Golden Polands numbered six entries, and both prizes here fell to Mr. E. Burton. The *Silver* variety was badly represented, a second prize only being awarded to the pen of Mrs. T. Prideaux.

Ptarmigans, which here received the unusual honour of a separate class, were in three pens, of which Mr. F. P. Smyth was the owner of that which took the first prize, as,

also, of one commended. No. 34, the unnoticed, was an importation from Constantinople.

In *White Bantams* Mr. Channing took a second prize, and the same was awarded to Mr. J. G. Gully for his "black." The laced birds were represented by a single rejected pen, and the same with Guinea fowls.

Of *Turkeys* there were but two pens, for which a first prize was given to Mr. W. W. Rowe, for No. 146, and a second to Mr. Crawley, No. 145. Both of these were good.

Geese were of moderate quality, a second prize only being assigned to Mr. W. W. Rowe, who was also successful in the class for *Aylesbury Ducks*; Mr. R. E. Moore there following him in pen 150. The *Rouen Ducks* of Mr. E. Burton won the first prize, and some common Ducks of Mr. W. W. Rowe, the second, in the class provided for *coloured Ducks* generally.

The prize for *dead fowls* produced, among others, a pen of half-bred Barn-door and Shanghae, that stood first in the awards; while, in the second place, there appeared the progeny of the above-named mongrels, with Spanish, both belonging to Mr. W. Bassett.

A prize having been offered for the best six eggs of any one breed, a somewhat indefinite proposition as to the points by which the award would be regulated, Mr. S. C. Parkhouse obtained both the first and second prizes with those of the Shanghae race.

In *Pigeons*, Mr. Channing won with Trumpeters and Almond Tumblers, and was also commended for his Carriers, the prize for which was given to Mr. W. T. Square, as, also, that for Pouters. Mr. E. Burton's Fantails and Runts were pronounced winners, and his Almond Tumblers were commended. The fact, that among *Extra Stock* there appeared the name of Mr. Channing, as taking prizes for his Turbits, Nuns, and Owls, showed clearly that the regular Pigeon class should not have been limited to a few arbitrarily selected varieties, but have included all that are now generally recognised. A prize was here allotted to the Frizzled fowls of Mr. T. Russell.

A Rabbit show was also permitted to add its attractions to the poultry pens, and here the name of Mr. G. M. Rowe appeared as the winner of the first prize, and that of Mr. J. P. Briggs for the second.

We understand that it is the intention of this Society to hold two annual Exhibitions, and that its second meeting will take place in the ensuing autumn, when chickens, principally, will appear for competition.

HARDY BORDER PLANTS.

(Continued from page 235.)

ACONITUM JAPONICUM.

THE JAPAN WOLFSBANE.

THIS is one of the very best of the whole family of Monks-hoods, being such a free bloomer, and its blossoms being very large, of a rich blue colour. Its roots are tuberous, supported by a large amount of fibres. It is readily increased by division, in the spring months, when putting up its first leaves. Its stems rise from three-and-a-half to five feet in height, much branched, and its panicked branches, short and numerous, forming a fine head of bloom. The leaves are much and deeply cut, the segments being narrow, often cut into threes. The whole plant is smooth, veiny, and of a dark green colour. It is a native of Japan, and was introduced to this country in 1790. It flourishes in common garden soil, and from its height and beauty forms a delightful back or centre row plant for either beds or borders; flowering from the end of June to the end of August.

T. W.

POST-MORTEM EXAMINATION OF A HEN COCK.

ALTHOUGH it is much more pleasant to proclaim that our opinions formerly published have been verified by knowledge subsequently acquired, yet, when truth only is our aim, there is a certain satisfaction in acknowledging that our

previous views were wrong; it is, as has been truly said, simply confessing that we are wiser to-day than we were yesterday. I am thus circumstanced with regard to the anatomy of the birds called *Hen-Cocks*, one of which I exhibited at the Surrey Summer Show, and described at page 369 of the last volume, stating that I regarded it as a male bird, with some arrest of development in the plumage. Recently I killed it for the purpose of examination, and found that it was simply a hen in which the ovary had never been developed, but had degenerated into a hard cartilaginous mass. This bird, as may be seen by referring to its description, was remarkably like a cock, in comb, wattles, general carriage, &c., and from its examination, therefore, I am induced to hazard an opinion that all so-called *Hen-Cocks* are simply hens in which the ovary has never been developed; this will account satisfactorily for the fact that those persons who (imagining them to be cocks) have endeavoured to breed from them have invariably failed to do so. In fact, I regard the only difference between what has been termed a *Hen-Cock* and a *Crowing Hen* (such as that whose *post-mortem* is described at page 128 of the present volume) to be, that in the *Hen-Cock* the ovary is never developed, or is diseased before it arrives at an active state; whilst in the *Crowing Hen* the ovary becomes diseased after having been in action, and, therefore, after the bird has laid.

The first condition, therefore, occurs in pullets, and as they grow they assume, more or less, the gait, comb, &c., of the cock—hence the name of *Hen-Cock*; the latter are old hens, who, having arrived at their full growth, necessarily retain their form and habits to a greater degree, and are, therefore, termed simply *Crowing Hens*.

Although both kinds may be kept as a matter of curiosity, it will be seen that they are quite unprofitable, in an economical point of view, as layers. I may mention, however, that Mr. Yarrell informed me that they are admirable nurses to broods of young chicken, but I have had no experience in their employment for this purpose.—W. B. TEGETMEIER, *Willesden, near London*.

SEA WEEDS.

(Continued from page 310.)

ORDER 10.—DELESSERIACEÆ.

WE come next to the tenth order, *Delesseriaceæ*, which, though not very numerous, are extremely beautiful and attractive, both as regards colour and form.

1. DELESSERIA.

"Rose-red, flat, membranaceous, with a per-current midrib; fructification of two kinds on distinct individuals. Named in honour of M. Beig-Dellessert, a distinguished French naturalist."—*Harvey*.

1. *D. SANGUINEA* (Blood-coloured).—Growing on rocks



in the sea, bearing numerous leaves from two to eight inches long, of a reddish-pink when living, but becoming a most lovely rose-colour, tinted sometimes with violet, when dried. The leaves, or fronds, are shaped like those of a Dock. The Rev. Dr. Landsborough mentions a beautiful variety of this plant which was once found floating at Sultivalts by Miss McLeish (a most zealous and diligent

weed-gatherer). It was a great bunch, of a dozen branches, some of the fronds being eight inches in length, and five-and-a-half in breadth. The peculiarity of this remarkable variety was, that it was lobed somewhat like *Delesseria sinuosa*, with a midrib in each lobe. Dr. L. also mentions a "magnificent frond of *D. sanguinea*, in the possession of Major Martin, of Ardrossan, thirteen inches long, and eight inches broad." It is common, but so beautiful that it is universally admired. It is very fine on the Cumberland coast, and a blacksmith there sent me a number of fine specimens, and said he had cut about three hundred from the rocks. He is much interested in all branches of natural history, and it is a delightful recreation for him after the labours of the day are ended.

2. *D. SINUOSA* (Scolloped) is also common, but very pretty. It is a parasite on the larger algæ. In spring the young fronds are of a rosy-pink, but later in the season of a darker hue, and varying from a brownish-purple-red to crimson; when older still, the leaves are often tinted with green. It adheres well to paper when not too old.

3. *D. ALATA* (Winged).—Very abundant. The stem is much branched, and with a winged membrane, but no leaves. The colour is a deep red. This plant makes pretty specimens for the herbarium.

4. *D. ANGUSTISSIMA* (Narrowest).—Much like the last, but a narrower frond. Harvey says, that it appears to him an extreme variety of a variable plant.

5. *D. HYPOGLOSSUM* (Tongue-shaped).—The frond of this pretty *Delesseria* is much branched, so that it forms quite a little bush. The lance-shaped leaves have a midrib. It grows on rocks, and is parasitic on other algæ—is "from four to six inches in diameter." In Ireland, the breadth of the frond is much greater than in British specimens. Colour varies from pink to red or crimson.

6. *D. RUSCIFOLIA* (Ruscus-leaved).—Not very common; the frond proliferous, and broader and shorter than the last. The colour is a fine red. On rocks, &c.

2. NITOPHYLLUM.

"Frond plane, delicately membranaceous, rose-coloured, reticulated, wholly without veins, or very slight vague ones towards the base. Fructification hemispherical capsules, imbedded in the substance of the frond, and ternate granules forming distinct scattered spots."—*Greville*.

1. *N. PUNCTATUM* (Dotted). The frond is very thin, and divided into segments, the fructification scattered all over it. It grows on algæ, and is an annual and a summer weed. Harvey speaks of gigantic specimens found by Mr. D. Moore, at Cushendall Bay, north of Ireland, five feet long and three feet wide! A beautiful species.

2. *N. HILLIE* (Hill's).—"On rocks; rare; first found by Miss Hill, at Plymouth." It is a handsome plant, of a sort of mulberry-colour, becoming orange-colour when put into fresh water. When recently gathered it has a very unpleasant smell.

3. *N. BONNEMAISONI* (Bonnemaison's).—Rare. "Frond with a short cartilaginous stem, broadly fan-shaped, two to four inches long, and about as broad; more or less deeply cleft; substance very thin and delicate; closely adhering to paper."—*Harvey*.

4. *N. GMELINI* (Gmelin's).—On rocks; rare; colour purplish-red.

5. *N. LACERATUM* (Lacerated).—The frond of this very variably shaped weed is much divided, and from two to ten inches in length; it is common, but makes pretty specimens. Very abundant indeed on the Cumberland coast, near Flimby, Maryport, Allonby, &c.

6. *N. VERSICOLOR* (Changing-coloured).—Rosy-red changing to orange-colour in fresh water. Miss Gifford says, that when the water first comes in contact with the frond it immediately loses its crispness, hissing and crackling like slackened lime, giving out at the same time a peculiar strong and pungent odour which makes the eyes smart. She has examined dozens of specimens in the hope of discovering the fructification, but without success. It has never been found in a growing state, but is thrown ashore by the tides, from June to August, in the south of England and Ireland.

3. PLOCAMIUM.

"Frond filiform, compressed, between membranaceous and

cartilaginous; fine pink-red, much branched; branches distichous (alternately secund and pectinated); fructification of two kinds. The name is from a Greek word signifying braided hair."—*Greville*.

1. *PLOCAMIUM COCCINEUM* (Scarlet).—This pretty weed is so common, and so well known, that it seems almost superfluous to describe it. It is a general favourite, with its beautiful and delicate crimson fronds. So common in some parts of Scotland, says Dr. Landsborough, that it is carted away for manure. It varies much in colour and in size, some specimens being almost coarse, others delicately pectinated, and very small. S. R.

(To be continued.)

ORCHARDS IN KENT.—No. 4.

CHERRIES.

ALTHOUGH the terms "Kentish Cherry" are familiar household words, yet the fruit does not occupy that prominent position, as an extensively cultivated one, which the name would imply, it being, in most districts of the county, of less importance than the Filbert, Black Currant, and Apple. However, it being of easy culture, it has in former years been more extensively planted than of late; and the number of new plantations making are very few indeed. Political measures, unnecessary here to mention, have opened out continental districts more suited to the growth of this fruit than our own precarious springs, consequently, London, and many other provincial towns, are supplied with Kentish Cherries that know nothing of the county, except, perhaps, in passing through it by rail or water. As my purpose is to describe the mode of culture adopted in Kent where this fruit is grown, I must leave the foreign produce to its own deserts, and, in the words of a worthy old grower, affirm, that if it was not for our late frosts in spring, we need not be afraid of foreign produce; but as we have no control over the late frosts very serious losses occur in consequence.

Contrary to most other cultivated fruits the Cherry does not seem to require a rich soil, or, rather, it is not necessary to supply it so frequently with those enriching substances which are so liberally applied to Filberts, Hops, &c., the Cherry being apt to "gum" off, or canker, when too grossly fed. In this respect it is a true type of the tribe of plants to which it belongs, for the Peach, in like manner, dislikes too high feeding, for it tends to produce in it a gouty habit. Another thing the Cherry dislikes is much pruning or cutting, either at the top or root; the latter being equally injurious as the former; hence the plan of planting it in such a position as to secure its roots against injury in that way, which is done by planting it in a field afterwards laid down to permanent grass; but, in a general way, the ground at planting time is in a course of tillage, and often remains so for a year or two afterwards. It is proper to observe, that standard trees are universally planted, and these with a stem of not less than six or seven feet: the distance at which they are placed apart depends on various circumstances—they are to be found from twelve to thirty feet or more, but twenty-four is a very common distance. In selecting trees to plant, great care ought to be taken that they have not endured too much cutting at top. Maiden trees are preferable to those fine-headed ones which have only become so at the expense of their after-health, perhaps; for it not unfrequently happens that gum is found exuding from some of those wounds made by the knife. The roots ought also to be good and whole, and have been taken up with care, and the tree, after being duly planted, must be tied. It is a common practice in Kent, in tying up newly planted fruit-trees, to put in two stakes, one on each side of the tree, and in driving them in let their tops lean out from the tree a little, but not so much but that they will draw up to it when they are tied to it and to each other. The benefit of this is, that while they are pulling against each other they are each pulling against the tree, and, consequently, securing it against side winds, which would otherwise rock it backwards and forwards. I need hardly observe, that these stakes are placed on a line with what is expected to be the highest winds, which, in the district I write from, is south-west and west.

All being planted in what we may call a ploughed-field, we will leave the occupier to put in what description of crop he chooses, and it is usually corn that he sows; for, be it remembered, that small fruits are not often planted with the Cherry as they are with the Apple and Pear, consequently the ground must be put to some use during the early part of the tree's progress; but it very often happens that the one following the planting of the trees is the last crop from tillage, and if so, the ground is sown down to grass, in the usual way, while the corn is on the ground; but before that is done, I may as well relate a practice some have of throwing up a mound of earth around the stem of each tree, rounding it off so as to form a mole-hill-like mound of perhaps a cart-load of earth. Although this is not a universal plan it is a very general one, but its utility may be questioned; certainly, the additional weight it gives steadies the tree in a great measure, but if its roots were sufficiently deeply planted before this "earthing up," its utility is certainly questionable, except on light soils, where it secures a greater depth and increased moisture; however, many healthy Orchards exist without it. I must leave its adoption or not to those whose inclination directs them, and leaving that subject, will endeavour to describe what soils and situations Cherry Orchards are in general formed on.

The Cherry seems to delight in a much stiffer soil than most other cultivated fruits, for without wishing for the moisture so much relished by the Black Currant and Raspberry, the Cherry likes one more stiff than wet; hence many fine Orchards are found on such heavy lands as grow good Wheat and Beans, and such soils not unfrequently furnish a sward of grass likewise, the latter being the surface produce of an Orchard of this fruit. The ground, at the time of laying down, ought not to be poor and worn out, although, as I have before observed, much enriching matter in contact with the roots of the trees is to be deprecated. Now, apart from the stiff, heavy loam described above, Cherries, especially of the *Early May Duke* varieties, are often found on soils of a much drier description; in fact, on the dry hill-sides of the limestone formation. Some extensive Orchards of this kind are found on the banks of the Medway, in its course between Tunbridge and Maidstone, and on some of the lateral ridges with which the district abounds, and which I have, in a former article, described as peculiarly adapted to the Filbert and the Hop. This dry and stony, but by no means shallow, soil, supports a crop of Cherries very well where they escape the frosts they are so often visited with in the first week of May; and as the *May Duke* and its kindred early Cherries are always most in demand, the temptation to plant them extensively existed in greater force before "free trade" opened the market to foreign produce; since then, the later kinds, as the *Black Hearts*, *Bigarreau*, *Flemish*, and *Kentish*, have been more in demand.

I must not take leave of this article without saying, that after planting the tree must be protected against the injuries of cattle, &c., by something being securely fastened around them; when it is intended to graze the ground with sheep, which are certainly the best, some furze, or gorse, ought to be bound tightly around the tree and its two stakes afore-mentioned; or, what is better still, each tree might be surrounded by a timber fence; three stout stakes being set up in a triangular fashion, cross pieces might be nailed on sufficiently close to prevent sheep putting their heads through, and between the top bar and the second one a wide space is occupied by securing two pieces in a diagonal form, in fact, like the letter X, forming a sort of brace, which, taken in conjunction with the triangular form of the enclosure, gives it a more sturdy character than the slenderness of the materials used would lead us to expect. This species of protection is adopted very extensively with all sorts of standard trees, and, when well done, it looks neat and orderly. The three stakes used are generally about two feet apart at the bottom, and a little more at top. They cannot well be dispensed with until the trees attain a considerable size, and the bark assumes that rugged, uninviting aspect which age alone can give, and which renders them no longer assailable by sheep. This same remark holds good in regard to Apples and Pears, all of which are attacked by sheep, &c., when not protected.

Little pruning is given to the Cherry. Some unruly

growths are, perhaps, curbed a little at first, after that little more is required, as the branches have not that tendency to entangle amongst each other, and get thick, as the Apple and Pear; for some of the Cherries have an upright growth at first, and after having attained a certain height, they then, by their own weight, gradually spread and bend downwards.

The kinds most grown are two or three *Black Hearts*, having local names; the *Bigarreau*, of which there are three or four apparent varieties; and the *Kentish* and *Flemish*, which are a distinct section from the others, and of which there are more than one kind of each. The *Morello* is not much grown, yet I do not know the reason why; as a fruit it is, according to market prices, more than double the value of any other, the very earliest, perhaps, excepted. Some growers have also added to their stock the more recent additions to the garden varieties, as the *Black Eagle*, *Tartarian*, *Elton*, &c., but they have not become generalised yet: and, as I have before observed, new Orchards are but sparingly formed, it is doubtful whether they have that trial they seemingly deserve.

In drawing this article to a close, I must not omit pointing out the advantages of having a considerable number of Cherry-trees together; for the preservation of the fruit from birds is a matter not so easily effected, and it is quite as difficult to keep them away from one tree as from a hundred; hence the advantage of having such a number together as will be worth the trouble of watching them, and there is no other way; and every gardener knows the difficulty of scaring these marauders away from such a tempting repast as ripe Cherries without the tolerable free use of gunpowder. Hence the advantage of having such a number of trees in one place as will afford keeping a vigilant watchman on the look-out continually; for these little depredators are up by early morn; and unless the produce be closely attended to, there will be few fit for use preserved from their rapaciousness; and in an Orchard of some acres of extent, netting and similar contrivances are out of the question.

H. B.

MORETON BAY IN AUSTRALIA.

THE letter of Edwin Smith, from South Australia, inserted at page 270, interested me much. I knew him and his father for many years; and, I might say, he left England from my house. He called on me among the very last he parted from; and I am very glad to hear he is likely to succeed. Here is another letter from a young gardener, a native of Perthshire, who went out from this place in 1852. The letter was read to me the other night by one of his friends here, and I asked permission to send a copy of it to the COTTAGE GARDENER; if only to infuse a little more of the spirit of emigration into the mass of clever young gardeners, who have little chance here to succeed to good situations. For myself, if I were on the right side of forty, I would even throw up a good situation and be off, for the sake of poor relations, if not to rough it out for my own advantage.—D. BEATON.

“Kangaroo Point, Brisbane, Moreton Bay, Aug. 7, 1853.

* * * * *

“You will, no doubt, be inquiring what sort of a place this is for gardeners. Certainly there are not many fine gardens; still, I could have got £2 2s per week as the above. But I have changed my occupation to that of a sawyer, as I can have £3 per week by working only five days a week; and then not so hard as I used to do for 10s. per week. And were I to work only as day-labourer, I could get £1 10s. per week, and no slave-driving here; Jack’s as good as his master. Provisions are as follows:—bread, 1s. 3d. per 4lb. loaf; beef, &c., 2d. per lb.; tea, 1s. 6d. per lb.; sugar, 3d. to 6d. per lb.; butter, 1s. 3d. per lb.; cheese, 6d. to 8d. per lb. Clothing, about the same as at home; as its all light clothing that is worn here, what would get a black coat, would dress you from top to toe. Glass and china are very high, and mostly all household furniture. The weather has been very dry these last two months, which is rare during the winter months; and when it does rain, it does in earnest; the winter crops are looking well, as the colder or winter months is the time to grow all hardy vegetables, such as

Potatoes, Cabbages, &c., and in the hotter or summer months, the Vine, and the Pine, and, in fact, this place will grow any and everything; only enter the dense scrub, there above your head is suspended the tender Orchid, while below your feet are entangled by Hoyas and Kennedias; in a word, this is the place to see the beauties of nature. But I must not overlook the natives as they lay about basking in the sun; its a hard case to induce them to work, as they will tell you, “white fellows work, black fellows eat.” I must give the ladies the praise for making them useful. And what amuses me most, they cannot bear a sight of them when they first come, but the one lets the other know how to speak to them, so that for a sheep’s head, value 2d., you may have your cottage washed, water fetched, wood chopped, knives cleaned, shoes brushed, in fact, the Marys, as they call them, are the only servants. There is something strange in their nature, as they all leave the settlement just before sun down; and all Australia would not induce them to stop; they are a very timid kind of people after dark. Were you to visit them at their camp, the only request would be for some tobacco; even in asking that they would only open one of their eyes, and if the answer is No, shut it directly. I have only sent you these few lines to let you know that we have reached the Antipodes safely, and, in a word, those that wish to do well cannot fail in so doing here, as a man from £20 to £30 can clear a piece of land that would support a large family. There is no such thing as charging for pasture, the animals are only branded with the name of the owner. Horses, cattle, and sheep, there stay in the bush for years without ever inquiring after. I am living about three miles from Mr. Caldwell; he has a place about one mile from the settlement, and is doing very well. I will not advise any one to leave home; but this I know, there is plenty of work and plenty of money. Even a policeman gets £7 per month, with wearing apparel found. And as beautiful a country as ere the sun shone on. By the same post I am writing for all my brothers to come out; and, perhaps, in a few weeks more, you will hear of your humble servant plodding his way to the diggings to try his luck there. Should any of you wish to come, the passage is pleasant, and plenty requiring your service. No poor people here to crave assistance; all are able to have a leg of mutton for dinner.

JOSEPH GRAHAM.”

THE RIGHT AND WRONG WAY OF PLANTING.

It is now just twenty years ago since I inclosed a strip of land, by the side of a road, on very clayey, wet, and indifferent subsoil. It was about two hundred yards long by about five wide; I posted, and railed it, and quick’d it. My first operation was to put a tile drain under it the whole length, about two and three feet deep; the fall was enough, and barely enough. I then trenched the whole of the ground about three feet deep; I had a fine old fellow about seventy years old (who was a “navvy” in his younger days), living in a cottage of mine hard by, and I allowed him to do just as he liked with my little inclosure. It amused him, and kept him, which was my object. Every grinning blockhead who passed by had something to say about my buying the land dearly; but some had the good sense to admit that what I was doing was right, and would “stand for the job,” if it did not pay me. My object was to do the land well, or it would not have been worth doing at all, and better left unclosed. I then planted a belt of trees upon it, consisting of Fir, Larch, Oak, Birch, &c. The plantation has grown to be the surprise of all who knew its origin: it is beautiful.

Now for the contrast. A neighbour, at the same time, inclosed a similar piece of land, and stuck in his trees any how; without draining, or trenching, or hardly digging, except a hole; and they present a miserable spectacle and contrast; and, I mean to say, that it would be better even now for him to pull them up, and to follow my plan; that is to say, if he means to have a good and thriving plantation at all. The question in these matters is this: does a man mean to accomplish that which he seems to be attempting? If he does, let him go the right way to work; if not, let him leave it alone. Mr. Appleby’s most timely letters on planting forest trees have led me to make these remarks.

To look at the neglect of planting by the landed gentry of this country, and the neglect of their plantations and timber, generally, you would think them a set of mortgagees in possession, rather than the proud owners of English estates.

A WORCESTERSHIRE MAN.

TO CORRESPONDENTS.

* * We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of *The Cottage Gardener*, 2, Amen Corner, Paternoster Row, London."

COCHIN-CHINA FOWLS (*A Norfolk Rector*).—We know of a few very good cockerels and pullets, of Sturgeon's breed, which will be parted with for ten shillings each; and, as in your case, they offer a good opportunity for improving the poultry in any neighbourhood.

CLOTTED CREAM.—*Fillingham* says, "I think I can supply your readers with a far more simple and practicable mode of making Devonshire, or clotted cream, than that mentioned in *THE COTTAGE GARDENER*. Keep the milk in block tin pans, which are far more cleanly and sweet than earthenware or wood. Place yesterday's milk over the top of a kitchen boiler, removing the iron opening; when the pan sounds dead by striking it with your finger take it off, and skim the cream the next morning. The heat will naturally force all the rich and creamy qualities of the milk to the surface."

SOWING CALENDRIA SPECIOSA (*An Ardent Amateur*).—The first week in March, or the first half of March, is the best time to sow the seed of *Calendria speciosa*; and the best soil for it is equal quantities of loam, peat, and sand; it likes good drainage, and does not require to be kept so moist as most plants. The seed pan should be in a hot frame till the seedlings are well up, after that the seedlings require more air and less heat than a frame gives. Sow the seeds thin, as the young seedlings are liable to damp if they stand crowded.

DRIED SPECIMENS (*Ibid*).—No one ever discovered a plan for drying specimens by which the colour of the flowers could be retained. After all, what is it but botanical haymaking, and we all know that hay does not show us the colour of the fresh material.

NUMBER OF BRITISH FERNS (*Ibid*).—No one can tell how many species of British Ferns there are, because it is so difficult to make out a species from a variety. We must rest contented with knowing how many kinds of Ferns belong to Great Britain, which are 197.

UMBRELLA ROSES (*Christopher*).—We take it you mean Standard Roses with the heads trained on an umbrella-like trellis, and we do not hesitate to say, that of all ways of training Roses that is the very worst. For constant bloomers, take Bourbon and Hybrid Perpetuals—Bouquet de Flora, Pierre de St. Cyr, Imperatrice Josephine, Barron Prevost, Mrs. Elliot, Madame Laffay, William Jesse, Pius the Ninth, Duchess of Sutherland, Comte de Montalivet, and Standard of Marengo.

FLOWER-GARDEN PLAN (*Yorkshire*).—We do not, and never did, pretend to select plants for a whole flower-garden. The plan is very good, however, except the four nearly triangular beds, embracing the central group; we shall change these to circles, and add four smaller circles in the centre, between the four half-moons, and four outside beds, then engrave it, when we shall say something about how the colours ought to stand, but we cannot select the plants.

EPIDENDRUM (*A. G., Liverpool*).—Your *Epidendrum* is one of the commonest weeds in all parts of the east coast of South America, from the Equator to the Mexican Gulf, and in the West India islands it is the smallest variety of *Coehentum*, and is named, no doubt, in some botanical system, but gardeners take no account of any of these useless varieties. Your other plant cannot be determined from the specimen sent, which was crushed by the post-office.

CUTTINGS (*J. S. M.*).—We shall give an essay on making cuttings shortly that will meet your wishes.

NEWINGTON'S HAND DIBBLE (*A Subscriber from the beginning*).—This is an ingenious and useful implement for putting in small quantities of grain per acre. We have used it with good effect; but hand-dibbling is a tedious process, and it is difficult to get ordinary labourers to use it with care and skill; and as it is often a matter of importance to seize the most favourable opportunity when the weather above and the land beneath are in the most favourable condition, the slow action of the dibble is objectionable; and we prefer the drill, which ought to deposit a moderate quantity of seed at a uniform depth. The great fault in the use of the drill is in putting in too much seed so as to crowd the plants. We cannot speak practically as to the benefits of the hand-row cultivator, but the greater scarcity of labour which now prevails, in consequence of recent changes, points to the necessity of machinery calculated to dispense with a portion of manual labour.—W. C. S.

PREPARING FEATHERS (*A Parson's Sister*).—The chief requisite is to dry them thoroughly. This may be done by exposing them to the sun in a room, or by having them kiln-dried in bags. When perfectly dried, they should be put loosely into a bag and well beaten, to separate the dust from them. They are in the best state for pillows and beds after they have had the stump of each cut off, as they then do not force their way through the ticking.

WHITE BANTAMS (*Several Correspondents*).—We shall observe upon the decision in question next week.

GLASS (*Hortus*).—We have seen the ribbed glass used with perfect success for Cucumbers and other forcing.

RUSTICUS AND A CONSTANT SUBSCRIBER.—We cannot insert your notes but as advertisements.

MILDEW (*Mary*).—Nothing but being kept in a drier air will prevent the mildew of which you complain. Your house, or room, must be damp.

BAKER-STREET POULTRY SHOW.—"I sent two pens of my Ptarmigans in the highest possible condition and cleanliness to the above show. I received them back on Tuesday morning, three whole days after the Show closed, and ten from the time they left home! They returned in so disgustingly filthy a state, that had they been kept the whole time in a pig-stye they could not have looked worse; both the cockerels had lost everyone of their beautiful long sickle tail feathers! Now, Mr. Editor, have I not a right to complain of this?—FREDERICK BERNAL."

DISEASED EAR IN RABBITS.—Mr. Allsop, the Rabbit fancier, says—"The cause is damp without good ventilation, and not being kept clean, and with good bedding. The cure is a little sweet oil put in the ear, and the lump then loosened with the thumb and finger until it will come out. If it should return, repeat the same, giving the Rabbit some sulphur in shorts, or barley-meal, moist."

ORCHARD PLANTING (*Troublesome*).—The best trees for your purpose will be either pyramids or dwarfs on the Paradise stock. If you understand how to manage pyramids, we would recommend them; if not, then choose dwarfs, to be grown in the form of a hollow basin. Plant them in rows running from north to south, with four trees in each row, and those at the extremities being each six feet from the walls, and the trees six feet distant from each other. The rows should be ten feet apart, and the distance between the extreme rows and the walls will be five feet—in this way you will have five rows. The Currants and Raspberries can be grown between the rows in the spaces of ten feet. In this way you will have a very pretty little orchard, and make the most of the room. The Morello Cherry you will, of course, plant against the walls.—H.

LIVERPOOL POULTRY SHOW (*Liverpudlian*).—It is quite impossible for us to sit in judgment upon birds we have not seen. Be assured, however, that with all competent judges, a well-matched pen of good form and in high condition will always be more considered than a pen deficient in those requisites, though superior in minor points.

LABURNUM TREE (*I. B. H.*).—As nothing thrives in the bed around, try some plants in pots, or tubs, plunged in the bed.

IRISH MOSS (*Ibid*).—Can any of our readers say "what quantity of Irish Moss ought to be boiled per day for a calf; and whether it is better mixed with either Linseed or Indian Meal?"

BUFF SHANGHAES (*Argus*).—To breed chickens of these with clear hackle you must select parents similarly gifted, and even then, for a generation or two, the hackle will not be immaculate. It is not, at present, possible to be sure of breeding such chickens. Your buff hen and golden hackled cinnamon cock will probably give some.

COOKING BEET-ROOT (*H.*).—There is as much reason in this as in roasting an egg. Enclose it in a paste of flour and water, and then either bake or boil it. There will be no earthy flavour in it then, and it is one of the most delicious and nutritious of vegetables.

SPANISH COCKEREL (*An Old Subscriber*).—The spasmodic affection of his legs has been caused, probably, by cold and damp. Let him be in a dry place, in a shed with ashes, or other dry, dusty materials for the floor, and with straw to sleep upon instead of a perch.

NAMES OF PLANTS (*Anne S.*).—Yours is *Epacris purpurascens*. (*A Young One*).—1. *Abies canadensis*. 2. *Cryptomeria japonica*. 3. *Pinus insignis*. 4. *Abies cephalonica*. 5. Not known. 6. *Pinus cembra*. 7. *Thuja Weareana*. 8. Some species of *Savin*. 9. *Escalonia tubra*. 13. *Helleborus niger*.

PROPERTIES OF ROUEN DUCKS (*A Subscriber*).—Hardihood of constitution; early maturity; and excellence of flavour. The Drake only should have the white collar. The colour, in both sexes, should approach as nearly as possible to that of the wild Mallard and Duck respectively. An average of good specimens of either sort would give the advantage in point of weight to the Rouen over the Aylesbury.—W.

GOLDEN-PENCILLED HAMBURGS (*A Poultry Woman*).—White down at the base of the tail of a Golden-Pencilled Hamburg cock is certainly objectionable. Your pullets of this breed, now nearly a year old, should have laid some eggs in the later autumn months, but the severe weather we have recently experienced may account for their present non-productiveness; and these fowls do not greatly distinguish themselves as winter layers. Good food and shelter is all we can advise, for whatever is calculated to force on the production of eggs must be ultimately detrimental to the bird. If you have a good run, the spring months will soon fill your egg-basket, but, if you cannot give your birds this indulgence, the sooner you cease to keep Hamburgs the better.—W.

TORQUAY SHOW.—"Allow me to correct an error in your report of the Torquay Poultry Show, with reference to the buff Shanghaes with which I took first prize there. They are stated to have been the same birds with which I gained the victory at Honiton. This is not altogether correct, one of the pullets having been different. At Honiton, the two shown were *Light of the Harem* and *Daisy*; at Torquay, *Light of the Harem* and *Wildflower*.—W. H. SNELL."

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WEEKLY CALENDAR.

M D	D W	FEBRUARY 9-15, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
9	Th	<i>Platysoma picipes</i> ; bark.	29.015-28.978	40-34	E.	02	23 a 7	1 a 5	5 40	13	14 32	40
10	F	QUEEN VICTORIA MARRIED 1840.	29.324-29.081	37-28	N.E.	06	26	3	6 28	13	14 33	41
11	S	<i>Platysoma depressus</i> .	29.368-29.362	36-27	E.	—	24	5	7 5	14	14 33	42
12	SUN	SEPTUAGESIMA SUNDAY.	29.494-29.388	34-27	N.E.	—	22	7	7 36	15	14 32	43
13	M	<i>Parnus sericeus</i> ; pond bank.	29.632-29.584	34-26	E.	—	21	9	riser.	15	14 31	44
14	Tu	Valentine.	29.818-29.798	32-18	N.E.	—	19	10	6 a 45	17	14 29	45
15	W	<i>Hydrophilus caraboides</i> .	29.818-29.798	35-23	N.W.	—	17	12	8 2	18	14 26	46

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 45.6° and 31.3° respectively. The greatest heat, 65°, occurred on the 10th in 1831; and the lowest cold, 3°, on the 11th in 1845. During the period 117 days were fine, and on 72 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 293.)

ARABIS TURRITA: Tower Wall Cress; Tower Turkey-pod;
Great Tower Mustard.



Description.—It is a biennial. Root tapering, simple,

woody. Herb light green, more or less densely downy all over with fine, short, soft, starry hairs. Stem a foot or more in height, cylindrical, simple, erect, leafy. Leaves hairy on both sides, reversed-egg-shaped, broad, toothed, rather acute, but not pointed; the root ones tapering downward into foot-stalks; the rest heart-shaped at the base, clasping the stem; the uppermost gradually diminished into oblong bracts, each accompanying one of the short flower-stalks. Cluster flat-topped, nearly or quite simple. Petals pale sulphur-coloured, with a spreading border. Glands two at the inside of the shorter stamens, and two at the outside of the longer. Style very short, with a small, not dilated, stigma. Pods very long, flat channeled, thickened at the edges, curved downwards as they ripen, chiefly towards one side; their valves slightly undulated, not at all keeled; on short stalks. Seeds round, compressed.

Places where found.—On old walls and stony places; very rare. It has been found in Cambridge on the walls of Trinity and St. John's Colleges; in Oxford, on the walls of Magdalen College; and in Kinross-shire on the walls of Cleish Castle.

History.—This is the *Turritis major* of old botanists; and Ruellius, as observed by Gerarde, states of the whole genus—"the juice of the herb healeth ulcers of the mouth, and the poor peasant doth use the oil (of the seed) in banquets, and the rich in their lamps." It was thought by Bauhin, Ray, and others, to belong to the genus *Brassica*, and its glands are those of that genus, but its flat accumbent cotyledons, and simple row of seeds, added to the habit, settle it as a species of *Arabis*. It was found at Lewisham, before the year 1732, by Professor John Martyn. (Smith. Withering. Martyn. Johnson's Gerarde.)

THE present very high price of BREAD has brought to us such a multitude of complaints and queries—all suggestive of desirable information—that we will combine the answers and observations they have elicited in one prominent notice.

Every householder is competent to decide, from the evidence of his own eyes and his own palate, as to the quality of the bread offered to him; but whether the loaf be of the legal weight is not so obvious. We beg to warn our readers on this point, for the present high value of bread offers an additional temptation to bakers to be fraudulent—a temptation they have no great anxiety to resist. This is no uncharitable conclusion, for we know that of four four-pound loaves, each from a different baker, not one was deficient in weight less than four ounces. There used to be a very summary mode of

punishing such dishonest purveyors of bread, which, though contrary to the spirit of modern inflictions, yet might be wholesomely adopted without the attendant cruelty. A piece of wire was drawn through a loaf deficient of the assize weight, and the same wire was then passed through the baker's nose, and thus arrayed, seated on a hurdle with a label specifying his name and offence, he was dragged through the streets of the town. In Russia, without more to do, they used to nail the fraudulent baker by the ear to his own door-post.

In mixing the flour for bread-making, it is of very great advantage to have either Bran or Rice boiled in the water employed. The increase of weight of bread obtained by so doing is very large, as will appear from two statements we shall append. It is true that such addition gives but little increase of nourishment, but

physiologists have thoroughly demonstrated that a certain *quantity* of food is as essential for health as a certain amount of nutrition.

A correspondent (A. B.) says:—

"I beg to enclose a receipt for cheap and wholesome bread for the poor. I have tried it with flour from which only the bran has been taken out, and it produced twenty-eight pounds of good bread; at the same time, and in the same oven, I baked fourteen pounds of flour in the usual way, which made eighteen pounds of bread. I then showed the different results, side by side, to our own labourers. Take a pound-and-a-half of whole rice, boil it gently over a slow fire in three quarts of water, for about five hours, stirring it occasionally, and afterwards beat it into a smooth paste. Mix this while warm into fourteen pounds of flour (*without any more water*), adding to it, at the same time, the usual quantity of yeast. Allow the dough to work the usual time, near the fire, after which divide it into loaves, and it will be found, when baked, to produce from twenty-eight to thirty pounds of excellent white bread."

A Prebendary of Durham, writing to his Diocesan some years ago, states as follows:—

"I caused four bushels of wheat (nine-gallon measure) to be ground, and nothing but the coarse bran taken out: the produce was four bushels and a half of flour, and 22lb. of bran. About ten days ago, I boiled some of the bran, and kneaded a due proportion of the flour with the strained liquor, and the result of the experiment was so highly satisfactory that I resolved to repeat it with the most strict attention and the most scrupulous exactness. The details of this second experiment I am now about to communicate to your Lordship; and I thought proper to send you also some of the bread produced by it, that you might form a judgment of its excellence. Yesterday I took 5lb. of bran, boiled it, and with the liquor strained from it kneaded 56lb. of flour, adding the usual quantity of salt and yeast. When the dough was sufficiently risen, it was weighed, and divided into loaves; the weight, before being put into the oven, being 93 lb. 13 oz.; it was then baked two hours, and, some time after being drawn, the bread was weighed, and gave 83 lb. 8 oz.—loss in baking 10 lb. 5 oz. The same quantity of flour kneaded with common water loses about 15 lb. 11 oz. in the baking, and produces only 69 lb. 8 oz. of bread;—gain by my method 14 lb.; that is, a clear increase of one-fifth of the usual quantity of bread from a given quantity of flour. This increase, which at first appears astonishing, (since only 5 lb. of bran were boiled) seems to depend on a combination of three causes: first, the water in which the bran is boiled weighs half a pound more per gallon than plain water; secondly, owing to its glutinous consistence, it is less subject to evaporation by heat; thirdly, and principally, a greater quantity of it is necessary to make the dough; a bushel (or 56 lb.) of flour requires three gallons (*i. e.* 27 lb.) of plain water; but it imbibed three gallons and three quarts of bran water, weighing 35 lb. 10 oz. The bran, after being used in this way, is equally fit for many domestic purposes, and I suspect even more nutritious for pigs and poultry than if given to them raw. I had the curiosity to weigh it after the liquor was strained off, and found that it had gained 12 lb. and if water incorporates with it the same manner as it does with rice, why may not its nutritive power be increased in the same manner? The conjecture accords, at least, with Count Rumford's principle. But to return to my experiment: I have amused myself with the following calculation, which perhaps will make your Lordship smile. The increase of bread, by this method, being a fifth from a given quantity of flour, the consumption of flour would be saved by it every sixth day, or sixty days in a year. Supposing then that the practice were universally adopted, and taking the consumption of flour in this kingdom at 200,000 bushels per day, the *annual saving* would amount to 12 millions of bushels, which, at the present price, would cost about 10 millions sterling, and in ordinary times above four millions. Of the wholesomeness of the bread there can be no doubt; of its flavour you will judge by the specimen I have sent you; and I can add from experience, that it keeps very well. After my first

batch had been baked ten days, I put a loaf which remained of it into my oven for about 20 minutes, and, being suffered to grow cool again, it was cut, and had every appearance of new bread; nay, we even thought it better than it was at first."

It deserves to be better known, in support of the economy of using only stale bread, that during the great scarcity in 1800, an Act of Parliament was passed prohibiting bakers selling any bread "until the same shall have been baked twenty-four hours at the least." This act was founded upon evidence taken before a committee of the House of Commons, which demonstrated that one-half of the bread in London is consumed the day it is baked, and that if the bread were kept for twenty-four hours the saving would be from one-third to one-eighth of the whole consumption. That this is so was further substantiated by the Baker's Company stating that the consequence of the Act was to reduce the consumption of bread one-sixth.

With regard to the nutritive, yet cheaper, articles that may be advantageously mixed with Wheat flour for bread-making, we stated, in a former number, our own experience in adding boiled Potatoes, rubbed through a colander; and we have heard since that Turnips may be employed in the same mode. When the bread is twenty-four hours old, we are told that not the slightest taste of the Turnips is detectable. We have also received the following on this important enquiry:—

"The Editor of *The Cottage Lamp*, begs to draw the attention of 'S. E. J.' to the following receipts for cheap and wholesome bread, inserted in the September number of that Periodical, and taken from a very excellent work, 'The Family Economist.' They are as follows:—

"1st. Maize, one gallon; barley, one gallon; wheat flour, half-a-gallon.

"2nd. Maize, one gallon; wheat, one gallon. (This is an excellent bread.)

"3rd. One gallon each of oatmeal, barley, and wheat; or oatmeal and wheat, without barley.

"4th. Barley flour, one peck; wheat flour, half-a-gallon.

"5th. One gallon each of barley, rye, and wheat.

"6th. One gallon each of barley and rye; two gallons of wheat.

"7th. Buck wheat, one gallon; barley or rye, one gallon; wheat, two gallons. In using any of these mixtures, it is found best to ferment the wheat flour by itself, and then add it to the other materials, to make up, and rise in the usual way."

As the following suggestions from the Irish College of Physicians are somewhat more specific, and less general, than any others hitherto issued, we beg to recommend them to our readers.

The deplorable state of things on the banks of the Liffey is just a faithful exposition of the condition of all our great seaports; and until some change in the present system shall have been brought about it would almost seem that the more extensive the system of liquid sewerage, the more completely must our fine rivers be empoisoned. Seeing that one-half of the cholera in England occurred in eight great seaports, the lowest parts suffering the most, it is impossible to over-estimate the significance of the warning which has

* See our remarks, Dec. 1st.

gone forth from the mouths of the Tyne, the Thames, and the Liffey: "precept upon precept; line upon line; here a little and there a little."

The danger from mismanagement of house sewers is not over-estimated by the committee. If used for getting rid of aught more powerful than slops and dishwashings, they should hardly communicate with the inside of houses, but the sink should be put down in a detached office. The daily flushing of house sewers (when a little chloride of lime may be employed) must be done at the ebb of the tide, or it will be productive of a doubtful benefit. There is no disputing the propriety of having privies and ashpits at some distance from the house, carefully closed in, and regularly cleansed and emptied by the aid of covered scavenging carts, &c. The use of lime, chlorine, peat, charcoal, &c., we have already urged; also the direct sympathy between the skin and the bowels; and we concur in the committee's very rational remarks on diet. In a future number we hope to give their views of the treatment of the disease itself.

SANITARY MEASURES RECOMMENDED BY THE CHOLERA COMMITTEE OF THE COLLEGE OF PHYSICIANS IN IRELAND.

"The most important object, perhaps, that can be attempted, both in the public arrangement of a great city and in the domestic arrangement of houses, is *to secure an uninvited atmosphere, and, as far as possible, to preserve it from those foul exhalations with which it must become loaded wherever a great number of people are congregated in a comparatively small space.*

"To secure this object, more especially as a means of preventing the spread of epidemic diseases, the strictest attention to sewerage is imperatively necessary. The effect of deficient or imperfect sewerage on the spread of epidemics is so fully established that it may be regarded as indisputable.

"The facts observed in Great Britain and Ireland, during the prevalence of the epidemic cholera in 1849, if they do not place cholera and defective sewerage in the relation of cause and effect, at least prove an intimate connection between them. All manure heaps, filth of every description, stagnant pools of water, &c., should be immediately removed from the vicinity of dwellings.

"The main sewers should be frequently flushed with water, and all the communications between them and the atmosphere should be closed, except those requisite for drainage; the latter should be provided with water valves, or trapped so as to prevent the escape of recurrent effluvia.

"If the sewerage of the city of Dublin permitted, the committee think it would be advisable to have all the sewers flushed simultaneously.

"The refuse matter, street sweepings, &c., removed by the scavengers, should be so disposed in convenient depositories outside the city as not to become additional sources of danger; *moist filth should be covered over with dry materials*, so as to restrain evaporation, and the disengagement of offensive vapours, as far as possible; deodorizing substances, such as *dry turf mould, peat charcoal, or chloride of lime*, should be freely used to neutralise them.

"All occupants of houses, as well in the higher as in the lower walks of life, should be informed that it is not merely in the neglect of the main sewerage that a risk of promoting the spread of disease exists, there being scarcely a house of any class in which the sewerage and sculleries are not so mismanaged as to render them dangerous to the health of the inhabitants.

"All ash or filth pits should be, *as far as possible, kept apart from the dwelling-houses*, and carefully closed in or covered up by closely-fitted doors.

"All communication between the house sewers and the interior of the dwelling-house should be carefully closed, and those parts with which it is necessary to keep a com-

munication to get rid of liquid waste should be carefully fitted with water valves. The air of the dwelling-house being warmer than the air of sewers, and escaping by the doors, windows, chimneys, &c., tends to exhaust the sewers of their foul air, which, rising in the house to supply the place of the heated air which has escaped, keeps up a constant supply of foul air, which, passing from the sewers through the dwelling-house, is necessarily breathed by the occupants.

"The same observation applies to water-closets, privies, &c.

"The too prevalent practice of throwing filth into streets and lanes should be effectually prevented.

"The authorities should provide *covered carts for the removal, every morning*, of such matters as would otherwise be thrown into the street.

"The committee cannot too strongly reprobate the practice which they understand has recently grown up in the poorer districts, of converting *the cellars and kitchens, which have been condemned as residences*, into ash-pits and receptacles of all sorts of filth.

"The committee cannot avoid observing, that the sanitary condition of the metropolis of Ireland must, notwithstanding every temporary and partial effort at improvement, remain in an unsatisfactory state unless means be provided for effectually abating that greatest of all nuisances, an enormous open sewer, formed by a tidal river running through the middle of the city.

"The Liffey, under the present system, instead of being an ornament and an advantage, as it would be if it received only the natural drainage of the district contiguous to its banks, is converted into a receptacle of foul matters from the numerous sewers which contaminate its waters, and the deposits from which, being left exposed when the tide ebbs, taint the atmosphere to a great extent with the most offensive effluvia.

"Lodging-house keepers, and the landlords of tenements let out to the poor, should be subjected to the regulations against over-crowding; should procure an adequate supply of pipe-water; provide proper ash-pits and conveniences, and ensure proper ventilation,—by opening windows at stated times, by ventilators, perforated zinc plates, lowered openings, &c. Moderate fires in open grates assist ventilation, raising the temperature inside the house, and, at this season, aid in preserving the functions of the skin and bowels in a healthy state. Sudden alternations of temperature should be avoided; the internal heat of the house should not be so high that the effect of passing out into the open air would produce chill of the surface, and possibly breed complaint.

"White-washing *with fresh-burnt lime* is of great importance; and where the disease should unhappily break out, the committee advise chloride of lime, dissolved in water, for washing the floors of the house. Burials within the city should be discouraged. In very poor localities, where pipes are not laid down, a water-cart for the neighbourhood might dispense water at the houses of the most needy, for cleanliness and dressing wholesome food.

"The committee advise no sudden changes in habits of living when moderate and regular. A due allowance of animal food, fish, and vegetables, with the usual condiments, and wine, sound malt-liquor, or other accustomed stimulant, in moderate quantity, is unobjectionable. Excess should be avoided, particularly in the case of ardent spirits; and also of food likely to cause indigestion or bowel complaint, particularly unripe, decayed, or unsound fruit.

"*Between the functions of the bowels and skin a remarkable sympathy or consent exists*, so that attention should be paid to secure a healthy state of the latter by the occasional use of the warm bath, and clothing suitable to the season, in order to keep up a sufficient degree of activity in the superficial circulation. Flannel or woollen clothing next the person is preferable at this season, with strict attention to cleanliness, and frequent changes of clothing.

"In general, debilitating causes must be avoided, as excessive, long-continued fasting and fatigue, exposure to moist, stagnated air, or to air loaded with effluvia of organic matters."

J. J.

THE HARDY FRUIT QUESTION.

As it is my intention to run over this subject again at intervals, a desire appearing to exist to that effect—if we may judge by Mr. Fish's letter, and other applications—in doing so, instead of grappling with the question in the abstract, it will be well to analyse it a little, and let the several divisions representing main points of culture have separate attention. This will be found by far the most desirable course, as the young gardener, or amateur, who wishes to take up the subject in earnest, will have an opportunity, such as young folks have with geographical puzzles, of studying each in its own intrinsic character, and then of learning to "dove-tail" them all together in order to make a whole.

The question of *Stocks* is one which may be fairly investigated, but not thoroughly settled by any man. A vast difference of opinion exists, and there is some ground for it, and I much fear, that until every Pear we have, or receive, is fairly tried on both stocks, under proper circumstances, nothing sufficiently conclusive will be found. Nothing but here and there an isolated fact, all very well in itself, but contributing little towards such a system as would satisfy an ardent fruitist or a man of science.

Here, perhaps, I may be pardoned for stepping aside for a moment, and suggesting the propriety of having some public garden, in a central spot, devoted to experiments of this kind. The Horticultural Society of London has done much towards settling the nomenclature of fruit, but it would appear that such matters as I here suggest would carry them wide of their objects, and, indeed, prove too much for their machinery. Moreover, I should dispute their situation for such a trial. Pears and other tender fruits, proved to succeed there, might fail, under similar circumstances, when tried in our more northern parts. I would rather suggest a midland situation—say within a score miles of Birmingham, and rather on the north side than the south. Fruits well proved here would be eligible for any part of England, and most of our better Scotch and Irish climates; the locality selected would be a guarantee to those placed under inferior conditions, and would inspire the public with more confidence.

As it is, nothing is more common in the north than to hear people say, "Recommended by the Londoners; yes, but we have not the London climate." For when they come to hear talk of the Fig-trees of Worthing, Lancing, and the neighbourhood, thriving like a Gooseberry bush, whilst they can scarcely grow them in the hot corner of a south wall, they naturally conclude that the southerners must possess immense advantages in point of climate.

In such a garden as that selected, the question of "stocks" should be pushed to its utmost; the influence of soils differing much in texture ascertained; the different modes of training well illustrated; and all kinds of protection principles carried out, in order to establish as much success and economy of application as possible. Now, such things would, I conceive, amply repay the fruit-growers of Britain, and I have little doubt, that with some ingenuity, such a garden might be made self-supporting after the first outlay. In such a garden (speaking now of Pears) I would make STATIONS of about four feet square for Pears of every kind; one class of stations should be a strong loam; the second a light or sandy loam; and the third a fat, dark soil, of neither character exactly—a sort of alluvium—and this I would obtain by blending thoroughly such things as pond-mud, ditchings, furrowings, old leaf-soil, peat, or any debris of rotten vegetables, with a good deal of sand—all these materials well broken down, mellowed, and thoroughly mixed; the latter intended for Pears on the Quince, for in such a prepared station, I have grown

the *D'Arenberg* Pear of higher flavour on a Quince stock than those on the wall.

In thus pursuing the Pear question, some may want to know why all this fuss should be made as to trials. I will tell them, or, at least, give an opinion why. I have repeatedly urged, in the columns of *THE COTTAGE GARDENER*, that those who would give the Quince stock a fair and honest trial should start on what, for the present, I may term a common-sense foundation. The soil in which they are grown should, at least, be such as the Quince, in its own nature, and ungrafted, would delight in. Surely, no man of any standing in horticulture will deny the reasonableness of this position: to hunt for arguments to prove this were surely a work of supererogation. Well, then, there next arises the whys and wherefores of light and adhesive loams, and this, almost before I can explain, will be tolerably obvious to most of our readers. Soils, we know, vary exceedingly in different quarters; and although the chemist may so highly simplify matters in his laboratory as to appear to bring all the great facts connected with cultural matters into the compass of a nutshell, by the use of such highly concentrated terms as clay, chalk, sand, humus, &c., yet, only exchange his blowpipe, crucible, &c., for a spade and a wheelbarrow, and see what a quandary he will be in.

Looking apart from so grave a subject, we all know what strangely contradictory reports meet us on all sides about fruits, more especially Pears. We do, also, know that Pears crack during their swelling; that they sometimes ripen prematurely—sometimes are so tardy in this act as to become more like our Derby Spa Pears, such beauties as the tourist may see, but not taste, at the far-famed Matlock baths.

Now, it is not fair, surely, to charge all this on peculiarity of climate; this alone cannot account for it, inasmuch as I have repeatedly known the most contradictory results from gardens within a score miles of each other. Neither can it be peculiarity of site alone, nor comparative elevation; at least, so I have found it, although I by no means deny a modicum influence to all these things. I would, however, not beg the question here. I do not wish to give a preponderance to the question of soil; I merely wish to force it on public notice for awhile. Admitting, then, that a trial, as suggested, would be of service, it will be plain that two leading principles in the way of soils must be well represented, viz., adhesive loams, and light, or sandy loam; and grant with this, the reasonableness of allowing the Quince stock its own element, and I have the case I felt desirous to make out when I began this paper.

I do verily believe, then, that, although my good friend, Mr. Beaton, has almost forced a recantation on me in a this year's *COTTAGE GARDENER*, as to the Quince stock, yet I must beg respectfully to assure him, that I must still consider the question of stock an open question; inasmuch as we have, since the days of our childhood, frequently met with Pears of very superior character from the Quince stock; and, although, through force of circumstances, this same Quince may have been either overrated, or grievously misunderstood, yet this, in the minds of wide-thinking men, may by no means force a conclusion. Indeed, as to the question of stocks, "in the lump," who shall undertake to say that our grafting and budding systems, as performed by the ordinary routine, are worthy of the age we live in? The fact is, the knowledge of the most practical, or, if you will, theoretical of men, by no means satisfies himself; he knows well that this branch of horticultural lore is much in the rear of other portions of gardening, inasmuch as we still seem confined to the rules of our grand-sires. We are all on a devious track, where doubtful foot-prints alone may be seen to guide us; and to these,

I suppose, we must confine ourselves until we find a better road.

In conclusion. I see no chance of a happy delivery out of this labyrinth but by real experiment; but I fear that wars and war's rumours—those direful antagonists of peaceful progress—will, for awhile, cause many horticultural questions, only in their swaddling clothes, to hold the state of babyhood longer than usual. Let us, however, still watch the bantling with close attention, and still, though in an intermittent way, afford every help. Those who live at their ease, and fear not the fluctuation of events, have, at least, a chance of perusing such interesting matter.

R. ERRINGTON.

TREES AND SHRUBS.

In this list I shall not confine myself to those plants that have been recently introduced, because I intend it to be more generally useful, but I shall point out those more recently brought to notice. Many of the plants in my list have been already mentioned in this work, and treated of in full, and by turning back to the indices of former volumes their proper cultivation will be found in addition to what is here stated.

ILLICUM FLORIDANUM, or Aniseed-Tree, is a low evergreen bush, growing slowly to six or eight feet, and requiring a damp sandy soil, and generally increased from layers. A native of swamps in Florida and Louisiana. Flowers of no account.

ILLICUM RELIGIOSUM, recently introduced from Japan, is a very nice low plant, that will do well in a warm, sheltered place, but does not require a damp situation. Both these are evergreen, and require protection north of London in hard winters.

MAGNOLIA GRANDIFLORA.—Everybody knows this fine evergreen, but many do not know that there are several varieties of it, some of which do not flower with us worth a straw, and seedlings of it take a very long time before they come to a flowering age. The one called *Exmouth grandiflora* is the only kind really worth growing. It is known by the rustiness which covers the under side of the leaves. A *Magnolia grandiflora*, with the under side of the leaves green, is not worth having till it comes to a great age, and hardly then except in very warm situations. It requires dry sandy loam on a dry bottom, and is as hardy as the Portugal Laurel, but flowers best against a wall. It is best increased from layers.

MAGNOLIA GLAUCA and *THOMSONIANA* is a fast-growing plant, and flowers early. The variety raised by Mr. Thomson, of the Mile-End Nursery, is the best, makes a beautiful lawn plant, and should not have a wall. The leaves are large, bluish-green, and fall off in the autumn.

MAGNOLIA TRIPETALA, called the Umbrella-Tree, on account of its very large leaves, and Elkwood, from the points of the shoots being like the horns of the elk. A very fast-growing, soft-wooded, deciduous plant, with very large white flowers; deep, rich soil, and a dry, sheltered situation, suit it best.

MAGNOLIA CONSPICUA.—This is one of the very best; it is one sheet of white blossom in April before the leaf comes, and when it comes of age it flowers as freely as *Tom Thumb*. No shrubbery should be without it.

MAGNOLIA MACROPHYLLA.—The long, large-leaved *Magnolia*, one of the scarcest, but one of the most noble-looking of the family, and comes nearest to the Umbrella-Tree. The leaves fall in the autumn. It requires a dry situation, and good, light soil, like all those large-leaved kinds.

MAGNOLIA ACCUMINATA.—This prefers a damp soil, but it will do almost in any soil, and for that reason it is generally used to graft others on, or scarce seedlings.

MAGNOLIA AURICULATA is also a large-leaved kind, which grows very fast, and is generally grafted on the last; they all have large, white flowers, and are amongst the finest-looking bushy or low trees of all we grow, whether in flower or not, and there are many seedling variations from each of them, which are highly valued by those who know them and can find room for them.

MAGNOLIA PURPUREA, with light purplish flowers, is a dwarf plant, often seen in American beds in front of large Rhododendrons. It is a very free-flowering, deciduous plant and very hardy. Any of the large-leaved kinds will graft on it as readily as on *acuminata*, and, like the Quince and Paradise stocks, it will dwarf on any of them, so as to make a miniature plantation of the most interesting kind imaginable; but for that way you must do the thing at home. There is no demand in the trade for these dwarfs.

EVERGREEN BERBERIES.—These, like the finer *Magnolias*, are not known half so much as they ought to be. There are nearly forty kinds of evergreen *Berberis*, and yet you can hardly meet with a person out of a great nursery who knows more than half-a-dozen of them. All that were known in 1850 have been described by Dr. Lindley, in the "Journal of the Horticultural Society," whence I abridge the following account of them.

CROWBERRY-LEAVED BERBERRY (*Berberis empetrifolia*).—A well-known spiny and trailing low bush, for a bog-bed or a dry rockwork. It grows anywhere and anyhow. From the Land's End in South America.

STAR-SPINED BERBERRY (*Berberis actinacantha*).—From Chili. A stiff bush, three feet high; grows anywhere, and spawns much from the roots. Flowers numerous, but very small—yellow, of course, like all of them.

BOX-LEAVED BERBERRY (*Berberis buxifolia*).—This is only a better variety of one called *dulcis*, a native of Valdivia, off the west coast of South America, while the Box-leaved comes from Terra del Fuego. It is a variable plant, which is the cause of these aliases, *dulcis*, *rotundifolia*, *microphylla*, and *inermis*.

YELLOW BERBERRY (*Berberis lutea*).—This was found by Mr. Lobb high up in the mountains (14,000 feet), near Veto, in Peru, whence he sent it to Mr. Veitch. It was found by Ruiz and Pavon, who first named it; and they said it was a large bush, eighteen feet high. It comes near to the beautiful *Berberis Darwinii*, and flowers in the same way. It grows in "coldish places," and stood out unharmed at the Exeter nursery of Mr. Veitch.

WALLICH'S BERBERRY (*Berberis Wallichiana*, alias *macrophylla* and *atrovirens*).—"An evergreen of most beautiful aspect;" a native of Java, said to grow to ten feet, with leaves and flowers much like the common *aquifolium*. It was described in Dr. Wallich's great work on the Rare Plants of India, and was introduced by Mr. Veitch; but I have not heard if it is yet on sale, but it stood out with them at Exeter.

RAGGED BERBERRY (*Berberis heterophylla*, alias *ilicifolia*).—The alias belongs to a pretty plant, and *heterophylla* is not worth growing except in botanic collections.

LEAF-LEAVED BERBERRY (*Berberis ilicifolia*).—A very rare thing, said by Dr. Joseph Hooker to be the handsomest species in the genus, and grows to eight feet high in Terra del Fuego. This most splendid *Berberis* flowered at Kew, and then died, and must be got over again. A Captain going through the Straits, or rather coming home through the Straits of Magellan, might find it, if he were to lie to and send out in quest of it. The leaves are like an evergreen Oak, but of a darkish green above and whitish underneath.

DARWIN'S BERBERRY (*Berberis Darwinii*).—Another gem of the first water, for which we are indebted to Mr. Lobb. It will grow five or six feet high, perhaps double

the size in our more favoured climate. It is a native of the islands of Chiloe and Valdivia, and on the main land as far as the Straits of Magellan, I believe.

SMALL-FLOWERED BERBERY (*Berberis parviflora*, alias *virgata*, but very different).—"It is a true evergreen, perfectly hardy, and rather handsome."

THE LONA BERBERY (*Berberis Loxensis*).—From the highlands near Lona, in Peru. Small flowers in erect clusters, and most beautiful foliage, deep shining green on both sides. Introduced by Mr. Veitch, through Mr. Lobb.

THE WAVY BERBERY (*Berberis undulata*).—From 12,000 feet high on the Peruvian Andes; small yellow flowers, in small, round clusters; fine wavy leaves, and growing to five or six feet high.

ORANGE-FLOWERED BERBERY (*Berberis Aurahuacensis*).—A most stupid name for a fine thing in Van Houtte's "Flore des Serres," from near the snowy mountains in New Grenada, at 9,000 feet elevation; and they are not quite sure yet if it is quite hardy. The flowers are in drooping racemes, and very deep yellow.

JAMIESON'S BERBERY (*Berberis Jamiesonii*).—Another very beautiful species in the way of *Wallichiana*, found by Hartweg, Purdie, and Dr. Jamieson, of Quito, to whom British gardens are much indebted, and after whom Mr. Veitch named it, he having sent them the seeds. Mr. Glendinning had seeds of it from Mr. Purdie, who collected for Kew. The flowers are in upright panicles. It "must certainly be a plant of great value in gardens."

THE WHITENED BERBERY (*Berberis dealbata*).—Raised in the garden of the Horticultural Society, in 1830. A stout plant, four to five feet high, with drooping flowers; a very well-known plant.

WHITE-BACKED BERBERY (*Berberis hypoleuca*).—From the north of India, by Dr. Royle, to the Horticultural Society; flowered in 1847. "A fine, handsome, evergreen bush," and "one of the stoutest of the genus;" also, "a remarkable fine species."

THE KUSHMUL BERBERY (*Berberis asiaticus*).—I had several standards of it at Shrubland Park; it soon makes a fellow to match a nice standard of the sea Buckthorn, *Hippophae rhamnoides*, and no garden should be without both of them, but as bushes, I would not give a fig for either of them. The Kushmul Berbery is the best hedge plant we have in England. A regiment of Cossack cavalry could not face it, or red deer either. It comes from seed, like Mustard and Cress, and grows as fast as any plant I know, also in any soil whatever. It is worse than the Black Thorn for poachers, in a game cover, and, altogether, a most valuable, or, rather, invaluable thing. There are many varieties of it from seed.

THE CHITRA BERBERY (*Berberis aristata*).—The native name is Chitra in Nepal. "The fine, close, bristle-pointed serratures of the leaves, the rich reddish-brown branches, and the long, loose, paniced racemes of (bright yellow) flowers, are quite peculiar to this plant, and separate it clearly from every other." The fruit is red, and hang on to Christmas. It goes under several wrong names, as *affinis*, *floribunda*, *Wallichiana*, &c.

THE UMBELLED BERBERY (*Berberis umbellata*, alias *angulosa* and *gracilis*).—A native of Kamaon, in the north of India. Grows here about four feet high; flowers in drooping racemes, and succeeded by oblong, purplish fruit. "The species is very pretty, in consequence of its graceful manner of growth."

THE DYER'S BERBERY (*Berberis tinctoria*), so named in consequence of furnishing, like other species, a fine yellow dye. A slender, low-growing shrub, of which we know but little yet in cultivation; it was only lately introduced by the East India Company.

THE OPHTHALMIC BERBERY (*Berberis lycium*).—"The real *Lycium indicum* of the Greek physicians," and,

"to this day its extract is used against ophthalmia with great success, as in the time of Dioscorides." A "bad evergreen, but a pretty summer bush." The flowers grow erect.

Section 3rd.—Leaves pinnate or trifoliate; that is, the leaves coming in threes together, or else in pairs, along after each other, as in the common Holly leaved Berbery.

THREE-LEAVED BERBERY (*Berberis trifoliata*).—From the North of Mexico, by Hartweg, to the Horticultural Society. A most beautiful, low-spreading, evergreen shrub, or you might call it ever-blue, for the leaves look like the blue Gum-trees of Australia in the shade; grows to three or four feet, and is quite hardy in Suffolk, and a very slow grower; a fine thing, but the beauty is in the leaves.

THIN-LEAVED BERBERY (*Berberis tenuifolia*).—Unfortunately too tender for our climate; it is with us a graceful tall plant for the conservatory; everybody admires the tall plant of it in the large conservatory of the Horticultural Society, at Chiswick. What a fine thing to send out to Australia, with the Japan and Chinese species.

EHRENBERG'S BERBERY (*Berberis Ehrenbergii*).—Not to be had in England, but it flowered on the Continent, and is described in Linnæa xx. 45, from the temperate parts of Mexico.

THE PALLID BERBERY (*Berberis pallida*).—From Mexico, and a very fine thing, but only a greenhouse plant in London, therefore out of my beat.

PRICKLY BERBERY (*Berberis fascicularis*).—Odd they should call this so, as it is not more prickly than any of the rest. A well-known low spreading bush, very like the common one, but more tender, and requires a wall, about London. Mr. Rivers got a cross between it and the common Holly-leaved, which is quite hardy, and intermediate between the two.

THE HOLLY-LEAVED BERBERY (*Berberis aquifolium*).—This is what I call the "Common Evergreen Berbery;" but I well recollect the day when I was asked five guineas for a little plant of it; then a guinea; then ninepence a-piece; and last of all a couple of shillings the hundred seedlings. The most useful plant in cultivation; will grow in pure sand and stiff clay anywhere and anyhow. I once got a berry from it as large as a Black Hamburgh Grape, and, like the large Hamburgh I mentioned the other day, I wanted to do wonders with it, but I fear it will never set the Thames on fire. This is the species of which are the immense specimens I mentioned last spring, at Bank Grove, near Kingston; perhaps the finest in England.

THE CREEPING BERBERY (*Berberis repens*).—With all the looks of the last, this is only a low creeping rock plant, that never rises above a foot or so, but runs along by its creeping under-ground shoot in all directions.

CHAFF-STEMMED BERBERY (*Berberis glumacea*, alias *nervosa*).—There never was a better-named plant; for it seems as if made on purpose to chaff the best of us until we get quite nervous for its slow growth, which is at the rate of about an inch in five years. It is a neat, stocky, little plant, and well worth growing for all that, and looks like a branch from the common just stuck in the ground.

NEPAUL ASH-LEAVED BERBERY (*Berberis Nepaulensis*, alias *pinnata*).—This long and much-talked-of Berbery was lately raised at Kew, and at the Garden of the Horticultural Society, but I believe first flowered with Mr. Pince, of Exeter. It was exhibited in bloom by the Horticultural Society in March, 1852, where I first saw it. A native of the north of India, and is believed to be hardy enough for England. A most noble plant, with strong upright clusters of rich yellow flowers, which are succeeded by a dark blue fruit of an oval figure.

ACANTHUS-LEAVED BERBERY (*Berberis Lechenaultii*, alias *acanthifolia*, both names by Dr. Wallich).—This is a more noble plant than the last, the leaves being eighteen inches long, with eleven or twelve pairs of leaflets. It is from the Nielgherries in the south of India, "found in almost every clump of jungle about Ootacamund." So that any one having friends at Madras, or in that presidency, might get any quantity of it. And the way to know it from the Nepaul plant is by its round berry, or fruit; the Nepaul one has oval berries. It is in England, but is very scarce.

FORTUNE'S CHINESE BERBERY (*Berberis Fortunei*).—Now a well-known species, with upright growth, four or five feet high, and too naked of leaves to make a very handsome plant; it is called the "Bamboo Berbery" by the Chinese.

MR. BEALE'S BERBERY (*Berberis Bealii*).—This is a splendid plant from the north of China, by Mr. Fortune, to the Messrs. Standish and Noble, of Bagshot. From dried specimens sent home by Fortune, Sir W. Hooker and Dr. Lindley mistook it for the *Ilex japonica*, of Thunberg; and *Bealii* is given as a second name to *Berberis japonica* in the "Journal of the Horticultural Society" for 1850, page 20. But Fortune stuck to his text, and maintained that his plant was very different from the *Ilex japonica*, and he was right; when his seedling plants appeared the proof was obvious. This and the next I saw at the Chiswick Show in June, 1852.

THREE-TINED BERBERY (*Berberis trifurca*).—A very strong leathery-leaved one from China, by Mr. Fortune, as above, the leaf ending in three strong spiry lobes, like the tines of a fork. It is mentioned in my account of the June Show at Chiswick, in 1852. It is largely cultivated in the province of Che Kiang for the dyers. It grows two degrees farther south than *Bealii*, and may be less hardy, but that we shall soon hear from Bagshot.

BERBERIS CONSANGUINEA.—This may be called the "Intermediate Berbery," that is, intermediate between *Bealii* and *trifurca*. It was found in the Green Tea district of Hwuychow, where *Bealii* was also found, and both must, therefore, be quite hardy here.

With the exception of Fortune's Berbery, all these from India, China, and Japan, seem to belong to one type, the *Ilex*, or Japan Holly, of Thunberg, who mistook an evergreen Berbery for a Holly. Those from Mexico and the north-west of America follow another type; those to the southward, to low swamps of Terra del Fuego, may be referable to a third type. If my eyes were bandaged, I could tell the China from the Indian ones by the feel of the leaf,—I mean the Napaul and Acanthus-leaved Berberis,—the northern ones being so much more leathery and stouter. The Funeral Cypress of China is but a northern form of *Cupressus torulosa* from India, and the Deodar of India but another form of the Cedar of Lebanon, and yet the whole are so distinct, that a common labourer in the garden could tell the one from the other.

Now, this is a sample of the way I mean to give lists of all the trees and shrubs, old and young, that are, or can be, expected to bear our climate, if I live long enough. This is the most complete list of evergreen Berberis anywhere, and many of the eastern ones must be high-priced till they seed, when they will be as common as any of them. They all grow from cuttings, and, I believe, by grafting also; many of them make underground runners and suckers, by which they are readily multiplied; but seedlings alone can make them numerous and cheap. How would it do to graft the large-leaved kinds on tall stems of *Asiatica*? We have all kinds of standards, and why not standard evergreen Berberis? The seeds of all ought to be sown as soon as ripe; but they will not come up till the following spring. There is hardly a plant worth growing among the deciduous Berberies which may not be referred to

the original type, the common one of which there are more than twenty kinds, differing in some slight respects.

Another subject has just been handed over to my office—the Alphabet of Gardening—on which I shall enter next week. This is odd enough, for I began life as a Dominic. D. BEATON.

SOWING PELARGONIUM SEED.

"WHEN should Pelargonium seed be sown, and in what soil and circumstances; whether in a cool frame or a bed; I only possess a frame and southern window?" The above is merely one of several enquiries. The very best mode of action is one thing; the most proper, under the circumstances, is quite another affair. Professed florists hardly ever sow a Geranium seed at a venture. Even they, at times, raise seedlings far inferior to the plants from which they came; but by careful hybridizing, and anxious management, they work for improvements in habit and form. Many realize a peculiar pleasure in raising plants from seed, and attending to the little proteges in their infantile state, having a strong love for plants and flowers of all descriptions, and yet but little of the more refined taste and enthusiasm of the professed florist. And these are just the people to say—"Why should not our wishes be consulted? Florists know all about it already. It is not what suits the few, but what suits the million that is of any advantage to us. If we have a pleasure in raising a Geranium from seed, such as the mere tradesman never experiences, why should we not know how to do it in the simplest, as well as the best, way, and without being told to go back to this page in that far back volume?" I fully sympathise with feelings such as these. The first cuttings I struck were Scarlet Geraniums. The first seeds I sowed in a pot were a mixture of Pelargoniums. I had much less success with them in my first trials than with the cuttings, and yet, at last, in rather unfavourable circumstances, I succeeded pretty favourably. To meet the circumstances of various classes, I will give various modes of treatment.

1. When a hotbed can be commanded in autumn, and a greenhouse in winter, where a warm end can be appropriated, with an average temperature ranging from 45° to 50° during the cold, dark months, with a rise from sunshine. This may be considered the most favourable means for raising these plants and getting them early into bloom. In such a case, our experience would lead us to sow the seeds as soon as they were gathered and had lain a few days—say in the beginning of August. The seed-pans should have been previously prepared, draining them well, and filling them with a compost of equal parts of loam, heath-mould, and leaf-mould, with just sufficient silver sand to make it light and porous. Pots, six inches across, or wider, would answer just as well, if not better; but in their case, the drainage should occupy fully one-half, and the compost should consist of various degrees of fineness, the roughest over the drainage, and the finest on the surface. I mention the above compost as being good; but let no one fret himself because he cannot get it, for, as previously mentioned, the road-drift soil obtained from the side of the highway, well aired, and lightened, if necessary, with sand, and with, if obtainable, a little charcoal-dust, will be amply sufficient.

One great error among amateurs and young gardeners is using soil for sowing seeds and for potting in a dry, dusty state. Just fill a pot or a pan with such dry soil, with or without a plant, and see how many times you must use a water-pot before you can moisten it, and you will obtain a clue to the reason why many seeds never vegetate; and why, often, in the case of small seeds, the seedsman is blamed because no plants come in the pot,

after you have either scorched them or washed them overboard. I have often thought that this great error is partly based on the judicious custom we adopt of sowing seeds out-of-doors when the surface is nice and mellow and dry. Did we sow when the ground was clammy and wet, we should clog the seed, and prevent air having access to it, and therefore, when from necessity we do sow in such circumstances, we cover with some dry and light material. When we sow when the surface is dry, we know there is enough of moisture beneath to rise and swell the integuments of the seed, and that, even if a shower does come, the rain will pass through it, and thus leave air passages which would not be left if the ground was solid and wet before the rain came.

Now, though the seed of the *Pelargonium* is not small, and, therefore, may escape the evils to which small seeds are liable, still, in their case, as well as in all others where sowing in pots under glass is adopted, it is advisable to have the soil in a moistish state, such as can be effected by watering the seed-pots well a day before sowing, allowing them to drain thoroughly afterwards; or even setting the pots or pans in water, that they may be thoroughly saturated, and then allowing them to drain for twenty-four or forty-eight hours. This is based on the general principle, that the less young plants require from the water-pot before they are pricked out of the seedling pan, the less danger there is of damping, shanking, &c. A slight exception must be made in the case of seeds which are imperfectly ripened, or are getting rather old. In their case, when the bulk of the soil is thus moistened, some dry material should be placed on the surface, in which the seeds should be embedded, as too much moisture in their case would promote decomposition instead of germination. Even in the case of *Pelargonium* seed, when little drills are drawn about three-quarters-of-an-inch apart across the seed-pan, and the seeds deposited in them about one-twelfth-of-an-inch deep, a little dryish matter may be sprinkled over them, and gently pressed down with a board, or the bottom of a pot, as your previous preparation of the pots will ensure plenty of moisture for the roots to feed upon as soon as they protrude.

When thus sown, the pots should be plunged in a hotbed yielding a bottom-heat of 80°, and a top-temperature of from 65° to 70°; and very little extra heat will yield that temperature at that season. In order to prevent the escape of moisture, and to hasten germination, the seed-pans should be shaded until the young plants appear, and if the seed is good you will not have to wait long. When fairly above ground, a little air should be given, but also a slight shade in bright sunshine. As soon as they have made a couple of roughish leaves they should be thinned out, pricking them into other seed-pans, or potting three or four round the sides of a three-inch pot. These should go again into the seed-bed, and receive the advantage of a sweet bottom-heat, be watered, aired, and shaded from the midday sun as before. In from three weeks to a month, all the strongest will require a three or four-inch pot separately; the weakest may continue in pans, or three or four in a pot. These, when thus fresh arranged, should be kept rather close to encourage growth at first, but as soon as roots are forming freely, more air must be gradually given during October, that the plants may be hardened off to stand, without shrinking, a lower temperature in winter. By the end of October, or soon after the middle, the plants should be transferred to an open, airy, warm part of the greenhouse, where they should stand not more than twelve or eighteen inches from the glass. Here they must receive what water they require, and be kept clear of dust and insects. In February and March, the single-potted plants may either have another shift into four or five-inch pots, or be top-dressed with rich

compost. It is waste of room to give these plants large pots until you see the bloom. You may expect to see flower-trusses from the earliest about Midsummer. The smaller plants shifted on in succession will be throwing up their flowers until the end of the autumn. If kept in the greenhouse all the summer, they will want watering very often, and if to save this you put them into larger pots you will retard the blooming. You will escape the double dilemma by placing the small pot inside a larger one, and placing moss between them. As soon as the flower-trusses appear, weak manure-waterings will give the flowers strength and size. If there are many plants, and you do not wish to fill the greenhouse with them, you would save labour by setting the small pots on a hard bottom out-of-doors, and plunging them in poor earth, sand, or ashes, after the middle of June, in a place exposed to the sun. If a plant shows bloom extra promising, lift the pot carefully, so as not to injure any roots that may have protruded, and place these roots, pot, and altogether, in a larger pot, water and shade for a day or two, and then give the plant a good position in the greenhouse. If you reported such a plant in the usual way, you would give less justice to the bloom than if you had allowed the plant to remain in the bed. If you did not value the pot, and could crack it in several places, without injuring the roots, before placing it in a larger one, and filling the space between with compost, that would be the best mode of acting under the circumstances. When weak manure-waterings are frequently given, or a pinch of superphosphate of lime is placed on the surface of the soil, it is amazing what fine trusses of bloom may be obtained from a four-inch pot. Under the above mode, most of the seedlings may be bloomed the first season.

2. Where there is a hotbed, but no greenhouse. Follow exactly the same mode, only, in September, appropriate a light of the hotbed to the young plants, so that you may keep them rather close, and then give air to harden them off. You could not keep them in such a place easily without fire-heat during winter. It would be necessary, previous to November, therefore, to get them placed in the windows of sitting-rooms where there was firing in winter. To save trouble, a number of plants should be placed in one largish pot, or if three or four are placed in a four or five-inch pot, or a few singly, if they were packed in moss, in zinc trays, they would require but little attention in watering, and could be easily moved from place to place, as the weather and circumstances might dictate. The plants would not bloom quite so early, under such circumstances, unless great care was exercised to keep them clean, to save them from cold, and yet afford them every ray of sunshine.

3. Where there is a greenhouse, but no hotbed, only a few hand-lights and bell-glasses. In this case, suitable soil should be prepared in a box, to be set in the greenhouse, and covered with a bell-glass, or hand light, so as to warm the soil before sowing. Or, what we have found rather better, prepare a piece of ground on the south side of a fence, by taking away a little of the natural soil, placing a layer of drainage, and then several inches of the prepared compost, and watering it with warm water, and then placing a hand-light over it for several days, and not only allowing the interior to be heated with sun-heat during the day, but taking care to confine that heat by a covering at night, removing it only when the sun came the next day, or the day became warm. Here the seeds should be sown, as mentioned above, and a little air given only after the plants appeared. By keeping them in such places when pricked out, and taking great care in covering, shading, and air-giving, provided they be sown early, they will not be far behind those that had hotbed treatment,

while all risks from steam and over-heating are avoided. In such a case, the plants should be housed by the middle or the beginning of October. It will be seen that this mode is equally applicable to those possessing only a window and a couple of hand-lights.

The above modes have reference to sowing seeds as soon as ripe, by which extra earliness of blooming is secured, at the expense of extra and continued attention. I have sown the seeds exactly the same way in a hotbed in spring, and have had plants in bloom from three weeks and onward later than those sown the previous August and September. But, as a general rule, fewer plants bloom from spring-sowing during that season, but then, if kept in small pots during the winter, they will bloom early the following year, and the attention they will require in winter will be nothing in comparison of the care demanded from those young things raised in August or September. When the seed is saved over the winter, it is best kept in an airy place. A good plan is to hang it up in a sitting-room, in muslin bags; it is much injured by confined damp. I have no doubt that many, like the correspondent with whose inquiry we commenced this paper, will prefer, for this season, at least, spring-sowing. Keeping this in view, let us glance—

4. At the mode to be adopted where there is a frame, and a southern window. I should turn one light of this frame as quickly as possible into a hotbed, and when all was sweet and nice, I would place inside my pots of seed. If such a bed was designed for Cucumbers, a corner of it would be the very thing. If such a bed was designed for early Radishes, or Potatoes, it would be necessary to have a corner, over which you could place the top of a hand-light, or large bell-glass or two, so that in giving air to other things you could keep your plants as close and shaded as you pleased. Proceed, as closely as possible, according to the directions given in the first case. Your plants will be all the better for any extra heat they can derive from the hotbed until the first weeks in June, then, if you have a light or two of a cold frame at liberty, or from which the early crop has been removed, it would be the very place for them for a month or six weeks, as you could encourage them there, with a close, moist atmosphere, such as you could not command in your window. As they grow freely, give them more air by degrees. Encourage only one stem, and never think of stopping a shoot. When once you see the flower, and are satisfied therewith, you may make your plant as bushy as you like next year. By the middle of July, your plants may have abundance of air in your frame, be placed in your window sill, or even in a sheltered place out-of-doors. Many will bloom; and those which are too small to do so will be as easily kept over the winter in your window as any other small plant.

5. Where there are no conveniences except a window, or a cool greenhouse—and yet, for saving the trouble of wintering small plants, sowing in spring is resolved upon. In this case, unless means such as those referred to above are used for accumulating heat, the end of March will be early enough to sow. The best position for the seed would be no great distance from the kitchen fire-place; and after the plants were fairly up, and were set in the window, or greenhouse, with a large glass over them, tilted on one side as the temperature increased, they might be moved back to the chimney-piece at night, until the days and nights become warm. Even under such circumstances, where people were resolved to conquer difficulties, I have seen numbers bloom in the autumn. Even with very moderate attention, and delaying the sowing until the second week in April, nice shrubby plants were obtained, that stood the winter with but little trouble, and bloomed early the following season. Where there are a deficiency of conveniences and

a lack of labour power, I would decidedly recommend spring-sowing.

Two things are essential to early blooming; first, small pots; and secondly, giving no enriching manures, either in the shape of top-dressing or rich waterings until the flower-buds show themselves. R. FISH.

THE CYCLAMEN.

(Continued from page 341.)

THE passion for new plants is so rife that good old ones, though ever so beautiful, have almost been driven out of cultivation; but there has been such great disappointment in many of the new plants sent out with high sounding names, and glowing descriptions of their beauty, that there is now a considerable reaction, and new plants are looked upon with a great amount of jealous fear that they either will not answer the character given to them by the introducer, or are difficult to grow and bloom satisfactorily. To prove this, I need only refer to two plants that caused quite a sensation at the time they were introduced—I mean the once famous *Plumbago Larpentæ*, and the no less be-praised *Fuchsia spectabilis*. No two plants ever introduced disappointed so much the plant-loving cultivator; and in a very few years, I have no doubt, they will sink into utter oblivion.

Not so with the subject of my present essay. They rarely disappoint the grower: though old in culture, they are as much esteemed as ever, and I trust they will be more so still as the knowledge of their culture becomes better understood. In my last paper, I described the method of propagating them, and I now proceed with the second part of the subject, namely,—

Soil.—It is well known to skilful propagators, that unless a plant has a proper soil to grow in it will not thrive satisfactorily. Heaths will not live in loam. Geraniums will not thrive and flower well in heath-mould; neither will New Holland plants generally grow well in either separately, but mixed together, with a due admixture of sand, this larger class of plants thrive and bloom to perfection. This having been found to be so by experience, the mixing of these soils has been practiced by all good cultivators, and the soils so mixed have very properly been termed a compost; and a mixed or compounded soil is suitable for the genus named *Cyclamen*.

The compost I use, and which I have found to answer remarkably well, consists of two parts loam of a rather light texture—such, for instance, as well-decomposed turf from an upland pasture would be after two years' exposure in the compost yard—and one part heath-mould, brought from a moor where the common Heath grows. This should also be laid up a year previous to using, to mellow it; and, lastly, one part of leaf-mould well decomposed. To these add about one-eighth silver sand. Mix these all well together, breaking the turfy parts with the hand, and picking out all the large roots of the Heath, or any large stones there may be amongst them; but by no means sift it, for if it is made fine by sifting it soon becomes so close and compact that water cannot penetrate it, or, if it does, it remains so long in it that the soil becomes sodden and sour, the fine roots die, and the plants no longer thrive, but become sickly and perish. This soil, or more properly speaking, the compost, should be mixed and prepared by being properly dried (that is, neither too wet nor too dry) in due time for the potting.

Potting.—This necessary operation should be done once every year, and the time for it is just before they begin to grow. The season for rest extends from the middle of June to the middle of September, or thereabouts; therefore, the repotting time will be about the first of October. In potting, proportion the size of the

pots to the size of the bulbs. Bulbs one inch across will require four-inch pots, whilst such as measure two inches diameter should have five-inch pots, and so on in the same ratio for less or larger bulbs. The utmost cleanliness should prevail in all the materials; the soil should be perfectly sweet, the pots either new or clean washed, and the drainage should also be clean. Old drainage will do if it is clean washed through several waters; but I always prefer fresh-broken crocks for these plants. Provide a little nice, sweet, clean moss, also, to place upon the drainage. In potting, proceed thus:—Lay a large piece of pot over the hole at the bottom of the pot, then lay round it a few lesser pieces, so as to cover the bottom of the pot; upon these place a layer of still smaller, enough to completely cover the last layer; then upon these last place a thin layer of moss. When this is carefully done the drainage will be effective. Then fill the pot with the compost nearly up to the rim, and then turn the ball of old soil out of the pot, and shake it out from amongst the roots. Clear away all that are dead, and spread the living ones out on the surface of the new soil; cover them over, and leave the bulbs just out of the soil; shake the soil down, and the operation is finished. Give no water for a time until fresh roots are produced. The after-treatment I must defer to another opportunity.

T. APPLEYBY.

(To be continued.)

WOODS AND FORESTS.

(Continued from page 341.)

PLANTING.—The season for this operation commences as soon as the leaves have fallen, and may be continued through all the winter months, weather permitting, up to the middle of March, always bearing this in mind, that the sooner it is finished, the more certainty there will be of the trees growing and doing well. If the trees have to be purchased from some nursery at a distance, the moment they arrive they should be laid in by the heels, as it is termed by planters. If the roots have become dry during the transit, they should, previous to being laid in, be thoroughly wetted, either by dipping their roots in water thickened with fine earth, or by pouring water upon them from a coarse-rosed water-pot. Whilst the roots are being wetted, let a long trench be opened deep enough to hold the roots. Then open the trees out, and lay them, not too thick, regularly in along the row, a man following quickly with a spade, to cover the roots, the great object being to get them covered up as soon as possible from the drying, shrivelling air.

By treating them thus the roots will be greatly preserved, and the chances of growing multiplied. I have, in the course of my experience, seen them very differently treated. To save trouble, the bundles of trees, when they came from the nursery, were placed close together, in outhouses, slightly covered with straw, and there they remained till time and weather permitted them to be planted. No wonder that more than one-half died by such injudicious treatment.

Many noblemen and gentlemen, finding this to be the case, have adopted the plan of devoting a plot of ground as a nursery, on their premises, purchasing small plants, and growing them for a year or two on the spot. This is a very advantageous method, inasmuch as the trees can then be taken up as many at once as can be planted in one day, and, consequently, there is more certainty of success, providing every due preparation of the ground is attended to previously to planting. But if the trees are had from a nursery, and carefully laid in, they will succeed very well, if the precaution is taken

not to take more up any morning than can be planted the same day.

The size of the trees to be planted is a subject requiring due consideration. In exposed situations, trees, three or four feet high, will be so blown and twisted about by the winds, that considerable numbers will perish, and such as do grow will be several years before they establish themselves firmly in the ground, however well the ground may have been prepared, and the trees firmly planted. It is a great mistake to suppose that there is anything gained by planting large trees, especially in unsheltered positions. One-and-a-half to two feet, at the farthest, are sizes that grow the best, because the wind has less power upon them. Besides this, the trees in the nursery-rows are generally planted thick, and then shelter each other, and, perhaps, have, in most cases, been growing for three or more years on the same plot of ground without being removed, hence the roots will be what are termed tap-rooted, with few side fibres; and these two points of growing thickly, and having only one or two straight tap-roots, operate greatly against a successful removal. Poor Richard says—"I never knew an oft-removed tree, nor yet an oft-removed family, that thrived so well as one that settled be." He is quite true, if trees were not required to be moved; but where they must be transplanted, one or two removals, by increasing the number of fibrous roots, is not only not injurious, but positively beneficial. Hence, all good nurserymen transplant their stock of young trees at least every second year, planting them thinner each time. Trees so planted, and more especially Conifers and evergreen shrubs, are much more useful and valuable to the planter. This practice of removing, or transplanting, is now generally practised in most nurseries, and, consequently, a somewhat higher price is charged for them, which is but reasonable. For it is a considerable addition to the expense of a nursery these frequent removals.

In sheltered situations, the larger-sized trees so removed may be planted with every probability of success. Old neglected plantations that have been severely thinned will be a proper place to plant these larger trees. In such situations, small trees would very likely be smothered by rank grass, ferns, &c., besides, where game abounds, being cropped off by hares or rabbits; hence, to fill up woods that have been thinned, the trees should not be less than three feet high, providing they are well furnished with fibrous roots, and the ground stirred up well to plant them in. If hares or rabbits abound greatly, the trees should be protected from their bites. I have often seen numbers of nice young trees in such places, in severe winters like this, with the bark peeled off all around as high as these pests to the planter could reach. Last year I planted an orchard of five acres, and though the game hereabouts is by no means plentiful, yet they found out my Pear and Apple trees, and began to make havoc with the bark. I adopted a very simple protection, cheap, and easily applied, which completely stopped them from barking the trees, and that was, I set two men to daub the stems as high as the hares could reach with cow-dung, made thin with water, about the consistence of common paint. It was laid on with a home-made brush of common garden mat, and one application served through the winter. Not a single tree was touched afterwards. Now the expense of the cow-dung paint was trifling, and a man could daub over several hundred of these in a day. I can confidently recommend this simple, non-injurious application, a preventive of hares barking trees.

T. APPLEYBY.

(To be continued.)

CULTURE OF TREES FOR LOCAL REQUIREMENTS.—THE LARCH.

It requires no great amount of poetic genius to pronounce healthy and well-regulated plantations of trees as one of the greatest ornaments of Nature, and the most careless observer of such things is seldom so far dead to all around him as not to feel pleasure, or its contrary, by the presence or absence of trees in the landscape before him. True, there are districts in which these noble productions of nature exist in too great a profusion to gratify the taste of the cultivated mind, which sees too much monotony to be pleased, unless it be accompanied also by something that is grand or sublime; however, there are few districts in this country to which this fault applies. The industry of the husbandman, through a long series of ages, has removed most of the traces of the primitive forests which encumbered this country at one time, and it is only here and there that a tract of land may be met with which there is reason to believe had never felt the plough or spade, nor any substitute for these useful implements of cultivation; such tracts are, however, to be met with occasionally, but they generally present a barren, uninviting aspect, and by their produce tell, in unmistakable terms, that much toil and trouble would be required to bring them into cultivation, and that when done, it would be very questionable whether such labour had been prudently expended. Other tracts certainly promise to do more, but then they are fenced in by certain trammels of the law in such a way as to debar all improvement. Of such class are some of the Royal Forests, which, however, may be more prudently looked after hereafter; but as this has been already adverted to elsewhere, I will advance no further, but beg to call attention to some matters more in detail as relates to the profitable culture of certain kinds of timber-trees, and the treatment necessary to their well-being.

There are few things connected with rural affairs of which more has been said than the pruning and thinning of forest-trees, and books and treatises innumerable have been sent abroad on the subject. Unfortunately, the most of these are couched in too general terms to serve in all instances, there being certain special cases wherein a treatment in direct variance with that generally given is not only excusable, but highly advisable, and as certain districts, or rather certain wants, give rise to these special cases, the one I am going to narrate may serve as an example to the rest, although they may, in each instance, differ much from it in the causes and effects which govern their respective conditions.

In travelling a little way from home with a friend from a distant county, who was an enthusiastic admirer of all Nature's productions, as well as a skillful and experienced manager of trees and woodlands, we came upon many objects which excited his anger, as well as others did his admiration, the latter feeling being, perhaps, confined to the effects which Nature produced, rather than through any well-directed skill in assisting her in such objects, and I have no doubt but (had he traversed this part of the county of Kent alone, without a chance of learning the wants and requirements of the district) he would have gone away, condemning us as the most barbarous managers of trees and woodlands that had any existence in a civilized country. Hedge-row trees, lopped from the ground almost up to their very tips; others, beheaded, and that operation having been several times repeated had given their trunks a singularly hideous appearance when seen for the first time by a stranger, and more especially so if it was in the dusk; but what drew from him most condemnation, was a plantation of young Larch Firs, which, to him, appeared like a large nursery abandoned to its fate, and

the trees struggling with each other for an existence. Now this may, at first sight, appear to many an imprudent way of managing things; as I believe I am within bounds when I say, that in a usual way, about twenty thousand Larch Trees are planted on an acre, and these never get either thinning or pruning; this, of course, at first sight, may puzzle those not versed in such matters, as they did my friend; but a very few words will explain all. Wood is a heavy, bulky commodity, and not easily moved great distances without incurring expenses beyond what its intrinsic value will repay; consequently, its greatest worth is on the spot where it is grown, provided a demand exists there. Now, in the case referred to, there is a demand, and a good one, for Larch poles of a certain size, as well as poles of other kinds of wood, but beyond that size or standard their value diminishes very much; hence, the propriety of cutting them at the precise period they are fit for market. I need hardly say, that Larch-trees, planted at distances not exceeding eighteen inches apart, speedily become drawn; and at the time when my friend saw them, they resembled, as he justly observed, a "forest of fishing rods;" some of the worst of the trees, probably, having had a bad start, had given up the struggle for existence, which the others competed for with all the energy, and not little of the selfishness, of a life and death struggle. This state of things puzzled my friend, who saw enough to convince him that edge tools were used pretty freely in the fruit plantation adjoining and elsewhere; however, he did not require much convincing of the profitable nature of the plan, which is this:—

The large extent of ground under cultivation as Hop-gardens, in Kent, and their consequent want of poles from ten to eighteen feet long, without any of the switch top, has, of course, led to a great demand for such articles, as some three thousand, or more, are wanted per acre, and these often wanting renewing, an active trade for such articles is kept up; and independently of the large quantity which a coppice of hard-wooded trees produces at each cutting, and of which I will speak hereafter, there has been a growing demand for Larch poles for many years, and many plantations of the kind above spoken of has been made of late, and many of these are made not by wealthy landlords with a view to ornamenting their estates, but by enterprising farmers and others, who look forward with some degree of certainty of being remunerated for their outlay, and in many instances the speculation has been a lucrative one; for on land of no great reputation, the produce of such a plantation often sells from fifty to seventy pounds per acre standing on the ground, the purchasers cutting and clearing it all away, and the seller, after grubbing the stumps up, which may cost (with the digging of the same) about £5 per acre, generally reaps good crops of corn afterwards from the change it has undergone, and by that routine of cropping, now so much practised, another piece undergoes the operation of planting, &c. I must not, however, forget to mention, that such a result is usually effected in about twelve years after planting, and sometimes it is less, if the ground be good, &c. As there is no attention whatever required after the first planting, save, perhaps, keeping the worst of the weeds down the ensuing season, the investment seems a favourable one, and on really good land I have known a ten-years growth produce eighty pounds per acre. Now, according to the pounds-shillings-and-pence-way of enforcing an argument, I question much if any other mode of growing trees of a forest kind present such a quick and profitable return; and I am not sure but a carefully-managed plantation of hard wood, cut periodically, be not equally a paying concern. Certain it is that timber is not so remunerative, for the old saying is, "that a coppice will buy the horse before the timber will

the saddle;" and though the remark be disheartening to those who so patriotically plant and clothe the country with its most befitting ornaments, yet it is too true, that as a crop, timber has almost ceased to be planted for remuneration, except in those inaccessible places where the husbandman cannot come, or where, for other reasons, he is not allowed to do so; but there are special cases, wherein trees are more profitable, and in a great many they are useful, but these, as well as other matters relating to coppices, &c., I must leave for another article; and in conclusion, would warn our young friends, when passing through an unknown country, not to jump too hastily at conclusions respecting the treatment of certain things, for, like the case above, it may be the very best in its way that could be adopted.

J. ROBSON.

THE FATTING OF SHEEP.

(Continued from page 344.)

IN continuation of the subject relating to the breeds of Sheep to be selected for fattening purposes, I must allude to the statement of Mr. Samuel Druce, given in the 31st No. of the "Journal of the Royal Agricultural Society of England," whose great practical experience in this matter must give it considerable weight and importance. The first important item in this statement is the comparative numbers of the different breeds of Sheep which may be kept upon the like quantity of food. The bulk of food requisite to fatten 100 Cotswold Sheep would fatten 105 Leicesters, 115 Hampshire Downs, 115 Sheep cross-bred between the Cotswold and South Down, and 120 pure South Down. The most important item which this statement furnishes is the comparative profit yielded by the same breeds in the value both of mutton and wool, and this will place them in the following order:—The Cross-bred Sheep give the greatest money return, the Hampshire Downs next, then the Cotswolds, the Leicesters, and last of all, giving the least profit, are the pure South Downs. Another statement upon this subject, based upon actual experiment, and carried out in the most elaborate and detailed manner, is by Mr. J. B. Lawes, and which will be found in the 28th No. of the same Journal, and must be taken as the most conclusive, it being the greatest combined effort of science and practice brought to bear upon the subject which has ever been offered to public notice, and the result is decidedly in favour of the Hampshire Down breed of Sheep, as compared with the pure South Down. Other statements and experiments may be adduced, but for the most part they point in the same direction. I must further say, that the above statement and experiment entirely support my own opinion upon the subject; and that after having given great attention to the fattening of Sheep, and having been a close observer of the best practices for a period of twenty-five years, I can, without any hesitation, confirm the above statements.

I cannot, however, entirely disregard the effect of soil and climate in this matter, and it would be no doubt difficult to state which breeds of Sheep are best adapted for fattening upon the different soils, but, in deciding this point, it is best not to overlook the breeds

peculiar to certain districts of the kingdom; and I may be here allowed to say, that in case any doubt arises in the mind of persons about to select a breed of Sheep for fattening purposes, they would do well to observe the prevailing breeds chosen by the most enlightened and experienced graziers of the locality.

In order that my readers may better understand the remarks I shall have to make, I propose to consider this subject as naturally divided into two departments, namely,—the winter fattening, and the summer grazing. I trust, also, that a few general remarks upon the purchase of stock will not be considered out of place. I cannot advise the buying of Sheep which are very poor, as it will always cost more to feed the Sheep up to tolerable condition than it will to purchase them in that state. Before you resolve to buy Sheep, endeavour to decide upon the age and breed of Sheep best suited to your soil and keeping; and in going through a fair for the purpose of purchasing, always select those which, in your own judgment, are best suited to your purposes; buy them as cheap as you can, but buy them, and remember that the purchase of stock merely because it is cheap (or what is called a bargain), must be characterised as folly, and that the likeliest lot to yield profit is that which you deem best suited to your requirements. I would further recommend that a warranty of soundness should be obtained, and no difficulty will be found in securing it; for I have never known parties hesitate in giving a warranty when they felt satisfied that it was not really required.

I must now proceed with the consideration of the first branch of the subject—the winter fattening of Sheep in the open field—for although I propose to make some remarks upon the comparative advantages of house and field-feeding, yet I must defer them until the conclusion of this article. The great increase in our population, and its requirements, has completely reversed the system of fattening Sheep; formerly their summer grazing was a matter of primary importance, but since the introduction of root-crops the winter fattening process has now become the most essential, both as regards the necessities of the consumer and the profits of the arable land farmer. Before the purchasing of stock takes place, calculate, as near as possible, how many can be kept, and the period you wish to finish root-feeding; and in case it is required to clear the land early for the purpose of sowing winter and spring wheat, the number of Sheep may be increased in the same proportion, and it will be necessary, in such case, to resort to artificial feeding, in order that the animals may be fattened in less time. Under ordinary circumstances, a fair rule to go by is that ten acres of turnips will fatten 100 sheep, supposing the crop to weigh about twenty tons of roots per acre, and that they receive as much of good hay as they will eat during the period of consumption. This, however, must in reality be only considered the starting point in feeding, for the consuming a given quantity of turnips may be made to extend over a great length of time, by the addition of feeding materials, such as oil-cake, corn, &c. In stocking a farm with

fattening Sheep, when the object is to consume the root-crop continuously from October to April inclusive, I do not hold it to be a good plan to purchase Sheep all of one age or condition; nor do I like the system of selling out all the stock at one period; I would prefer having some of them fit for market at an early period, and others later in the season. The advantage of this plan will be found in those winters when the roots are seriously damaged by frost, for in case of any great diminution of the root-crop, it is a matter of great consequence to have a portion of stock fit for sale, as the numbers of stock may then be adjusted to the keep, and the crisis passed over without loss. It is very desirable, upon those farms where a portion of grass-keeping can be made available, to purchase a portion of Lambs to be held on through the winter, and sold fat after shearing time, instead of purchasing a full complement of wether Sheep; and I consider that two-teeth Sheep are more profitable to fatten than four or six-teeth Sheep; for although it must be admitted that the older Sheep fatten quickest, yet the two-teeth Sheep grow, and yield a heavier weight of meat in proportion to the food consumed; indeed, it is now somewhat difficult to obtain, in any numbers, the four and six-teeth Sheep; early maturity being now the most prevailing idea, the greater portion of the Sheep are fattened as tegs or two-teeth. Before leaving the subject of ages of the stock for fattening, it is necessary to make some comparison of the difference between the keeping of Lambs and two-teeth Sheep; and in the case of stock purchased in the autumn for keeping through the winter, until shearing time, whether we view the question in relation to first cost, or expense of feeding, it is in favour of the Lamb; for it will be found, of a lot of Lambs and two-teeth Sheep, bought at the same price, that the former will realize the most money when sold out, supposing both to have been kept alike; and this arises from the great growth of the Lamb, and the value of its fleece, as compared with that of the two-teeth.

JOSEPH BLUNDELL.

(To be continued.)

VEGETABLES AND FRUIT OBTAINABLE IN FEBRUARY.

A CORRESPONDENT says, that "a monthly notice of this kind would be a valuable piece of information for the employer and the gardener, as it would show him what others can do." Now, I should place but little value on this kind of knowledge, as every gardener that is worthy of holding his situation will try and make the best of his circumstances. Hearing of what others do, and a stray remark from his employers, at times, will generally be sufficient to cause him to husband his means to the utmost. To a right-minded, intelligent, industrious man, it is anything but pleasing, or provocative of renewed effort, to be grumbled at because he does not get such-and-such things so early as Mr. A. or Mr. B., when the circumstances and the expenditure are things altogether different. There would be less unpleasantness in this respect, if employers did not expect impossibilities at times; and if our great gardeners did not unwittingly allow the idea to get into the mind of their aristocratic visitors, that such-and-such things involved but little trouble or expense. I have noted down in my memory as many facts illustrative of these remarks as would fill a large-sized volume,—facts which would show

that the blame was often put on the gardener when he did not deserve it. Allow me to give just a few illustrations.

A lady, surrounded by company, blamed her gardener in an exhibition-room because his plants were not by any means such nice and new things as those of Mr. B.; summing-up with the finale, "I am sure the garden cost more than enough." I have often wondered how that lady would have looked, if the gardener had allowed his injured feelings as a man to get the better of his prudence as a servant, and then and there promulgated the fact—that for years there had not been five shillings spent either upon plants or seeds—even the vegetable seeds being all home-saved? A gardener, in these circumstances, would show discretion in never exhibiting.

Again, Mr. C. dines at Mr. D.'s in the month of March, and has Cucumbers for fish, and Radishes for salad, Mushrooms in all stages, young Potatoes, French Beans with mutton, and Strawberries for dessert. "Why cannot I have the same?" is the question put to blue-aproner the next morning, after seeing that there is no chance of his garden yielding him such dainties for weeks to come. "Why, Sir, you know you bound me down to have only that certain number of loads of dung; and what was the use of beginning early—I could not have kept things at all tender alive if I had commenced earlier." "Hang the dung; is not there that pit heated by hot-water: why should not I have Cucumbers in one part, Beans in another, and Strawberries in another, before commencing to force the Vinery?" "No reason at all, provided you allow fuel for the purpose; but didn't you tell me I must not use a particle more than that heap of dusty coal, which nobody else could burn, and these few chaldrons of coke, which will only be sufficient now if we have a nice sunny spring, but which I would have thoroughly consumed in a month or six weeks in severe weather in January or February."

Is it necessary to increase such examples, or to say where such high expectations on the one side, and unequal resources on the other, are likely to end, save in mutual disappointment? A few months ago, I listened to a gentleman extolling to the skies two pits he had heated with hot-water, by means of one small boiler; and, no doubt, I rather pricked-up my ears, when he enthusiastically spoke of the small quantity of fuel necessary to raise the water to 200°, and how he could heat two, and, he had no doubt, three pits, with no more fuel than it would be required to heat one, all that was wanted being merely to make the water hot, and circulate it must. When, on being appealed to, I quietly hinted that I imagined a certain quantity of fuel would only give out a certain quantity of heat; and that, even when applied to water, although the heat was very equally diffused, the fuel necessary to raise and maintain a certain temperature would be in proportion to the quantity of water in the pipes, and the loss of heat from radiation to which they would be exposed; and that, consequently, two or three pits could not be heated by the same quantity of fuel as would be sufficient for one, while that quantity would just be increased in proportion to the disparity of temperature between the internal and the external atmosphere. I saw a look, which said as plainly as possible, "Oh! you know nothing at all about economising fuel;" while I felt what a miserable position the poor fellow would be in that was expected to have early fruit and vegetables in those pits, with his fuel measured out to him by the bushel; and I did this all the more, because circumstances have compelled me to try almost every possible means of economy in this direction, so much so, that I have often felt the buddings of envy at the condition of those near the mouth of a coal pit.

Let our friends rest assured, that unless, in these circumstances, or where opportunities present themselves for using the waste steam and hot-water from factories, &c., for accelerating vegetation, that early crops of fruit or vegetables must always be obtained at the expense of money, or money's worth and labour.

Vegetables from Open Garden.—Celery, Brussels Sprouts, Borecoles, of sorts; Savoy, Brocolis, Coleworts, Spinach, Leeks, young Onions, Horse-radish, Red Cabbage, Parsley, and other Herbs, White Beet.

Protected in Beds—by the side of Walls or under Glass.—Parsley, Sorrel, Lettuce, Endive, and Cauliflower. *Dried Herbs* of all desirable kinds.

From Store Rooms.—Potatoes, Jerusalem Artichokes, Turnips, Carrots, Parsnips, Scorzonera, Salsafy, Red Beet, Onions, Shallots, Garlic, Rocambole, Chervil, &c.

From Forcing Ground.—Sorrel (green), Mint (green), Radishes, Asparagus, New Potatoes, Sea Kale, blanched Turnip-tops, Rhubarb Stalks, Mushrooms, blanched Chicory, Mustard and Cress, French Beans, Cucumbers.

Fruit from Fruit Room.—Apples, Pears, Medlars, Quinces, Walnuts, Chesnuts, Filberts, &c.

Fruit from Forcing Ground.—Pine Apple (at times), Oranges (at times, when cultivated), late Grapes, or early Grapes, and Strawberries.

R. FISH.

RICH, YET POOR.

By the Author of "My Flowers."

A VERY solemn word is about to be spoken to us *all* in the following awfully affecting narrative. It has been furnished by the same kind hand that has sent so many words "in season;" but scarcely any circumstances of *real life* have met my observation so heart-rending, so terrible, as these!

"In the middle of a great thoroughfare in a large manufacturing town, in the north, may be seen a quaint old house and shop, which, like an aged, prejudiced person, seems to laugh at modern innovations, and to hold improvements in supreme contempt. For although its more presuming compeers have gradually taken tone from their neighbours, as one after another abandoned its small windows, and adopted magnificent squares of plate glass, yet the old house still retains its primitive simplicity—a large stone step standing at the door-way, and two old windows, which have occupied the same position for more than half a century, forming its frontage. The real cause of its retaining so venerable an appearance, however, is, in fact, the tight-handedness of its possessor—a man whose father carried on the same business successfully before him.

"John Scott, until the last year or two, was invariably at his post behind the counter; morning, noon, and night, might ever be seen his broad expansive countenance attending upon his customers, until a looker-on might really wonder when and how he contrived to spare time to satisfy the cravings of his appetite. To be 'not slothful in business' appeared to be Scott's guiding text, to the exclusion of every other in the Word of God; for the scraping together and laying up of gold seemed to be the aim and end of his existence; and money in large quantities he did get, and held it, too, with an iron grasp which nothing could loosen. No matter what inducement was held out—no matter how great the need for charitable assistance—Scott was not to be softened into charity. Families to whom he was deeply indebted for their assistance in the gathering up of his wealth might press upon him cares and the most distressing necessities; charitable institutions with bankrupt committees might plead the absolute need of immediate help to enable them to carry on their benevolent undertakings,—Scott was unmoved; not a sixpence would he give! and yet he was rolling in wealth!!

"Although his fellow-townsmen despised his penurious habits, and held him in contempt, yet they still frequented his shop, for the articles he sold could not elsewhere be procured so good, and were certainly far superior to any production of his rival manufacturers. Alas! that this man should have forgotten the many warnings of the Word of God, not to make gold our idol; and that he should not have remembered that 'to whom much is given, from him will much be required!'

"But did this accumulation of wealth really add to his happiness? Listen to the rest of my story, ye who receive liberally, and dispense with niggardliness, and take warning. John Scott, to the surprise of his neighbours, was seen less frequently behind his counters; on busy days even his absence was occasionally noticed—questions were asked, and unsatisfactory answers were given, without any particular reasons being offered. At last the truth was discovered—a kind of diseased state of feeling had gradually been creeping over him. He began, at first, to express fears that his household expenses were beyond what his

income would afford—the fear and alarm increased; he next fancied he should become a bankrupt. His friends endeavoured to laugh him out of such an absurd idea, but the feeling increased, and to such a degree that he feared the approach of bailiffs; and at last his fancies carried him to such a pitch that he refused to leave his bed, and became decidedly deranged in mind upon that one subject. There he lies now, a wretched, miserable man—dreading every tap at his door as the harbinger of the sheriff's officer—every visit of a friend as a messenger to convey him to the work-house. His business is carried on by his friends, and he is never expected to be able again to resume his labours.

"Is there no moral in this? Does it not speak to the covetous man in words not to be misunderstood? Alas! what object is more melancholy—more difficult to meet in social life without expressing disapprobation of it—than the niggardly man of ample means?"

Readers, it seems almost beyond the power of man to speak upon so terrible a history as this! It seems as if the narrative itself said everything. But I would beseech you to consider how it is with men when they "fall down and worship" the prince of this world! "All these things," saith the devil to the soul, "will I give thee, if"—*if only*—"thou wilt fall down and worship me." Behold the end, the *worldly* end, of such worship and such service! While the very meat is in their mouths, the wrath of God goeth forth and slays their enjoyment of it. All is turned to wormwood. Like the apples on the Dead Sea shore, the mouth that eats them is filled with dust and bitterness. Satan, that old serpent, has twined round their hearts, crushed their spiritual life, and now leaves them in mockery to reap according as they have sown. Oh! what a portion is it when we reap *corruption*!

Here is an instance—an appalling instance—of the vanity of riches. Poor John Scott still holds them; they have not been snatched from him; but yet they are lost to him: the Lord has blown upon them, and they have withered in his grasp; his 'power of enjoyment is cut off; he can discern them no longer. Solomon says, "There is a sore evil which I have seen under the sun; namely, riches kept for the owners thereof to their hurt." He also says, "There is an evil which I have seen under the sun, and it is common among men: a man to whom God hath given riches, wealth, and honour, so that he wanteth nothing for his soul of all that he desireth, yet God giveth him not power to eat thereof, but a stranger eateth it: this is vanity, and it is an evil disease." Indeed it is.

Poor Scott yet lives, and the day of grace may, therefore, not yet be passed. There is "balm in Gilead;" there is ointment to mollify the deadliest sore; there is a medicine that can draw out even the sting of death! Is he wholly dead to things of sense? Might the Gospel sound still touch an unbroken chord in that poor, jangled mind! Nothing else can save body or soul; but the healing leaves of "the tree of life" *might* yet be laid to the soul, and it *might* arise and sing! He who was "wounded for our transgressions, and bruised for our iniquities," is ready and willing to save; and nothing can so effectually restore a diseased and disturbed mind as the soothing and sweet sound of Jesus' message to lost sinners.

Readers, let us "beware of covetousness, which is idolatry." Let us "use riches, as not abusing them," or they will "pierce us through with many sorrows." They are God's, and not our's, even when poured into our lap; we are only stewards, and if *unjust* ones—if *niggardly* ones—laying up, instead of laying out—REMEMBER.

CITY OF MANCHESTER EXHIBITION OF POULTRY.

ALTHOUGH behind many other localities, Manchester appears to have determined, when it did begin, to commence in earnest; and when we state that this, their first Show, numbered upwards of 900 pens, we may well congratulate the amateurs of the neighbourhood on their first success. The meeting was held on the 24th and 25th of January, in the "Free Trade Hall," a place in which other sounds than the crowing of cocks were wont to have been

heard. The building is sufficiently spacious, including the galleries, for a very large display of poultry, but having been adapted for gas-light use, it is unfortunately not provided with sufficient windows to light it effectually in the day-time, especially at this dull season of the year. Some temporary openings had been made to remedy, in some degree, this defect; but still there was not light enough to show the birds to advantage.

But even with this drawback the exhibition was a good one, for the Committee, headed by their chairman, Mr. Wanklyn, had made excellent arrangements for the reception and care of the specimens, and for the accommodation of the subscribers and spectators; and the area of the building was, moreover, large enough to enable them to have all their pens placed on a level, and covered with wire netting, so that all the light which the place afforded was made available, and the unfairness so much and so justly complained of where specimens are placed at different heights was avoided. In the body of the Hall, the pens were arranged in rows, with broad alleys between them; on the platform were three more rows of pens, and two rows extended around the galleries. The *Turkies*, *Geese*, and *Aylesbury Ducks*, were penned in a small adjoining building, communicating with the Hall; and a refreshment-room, with offices for the secretary and his staff, completed the arrangements.

Whether as regards quantity or quality, the Show, as a whole, may be safely pronounced highly creditable both to the promoters and exhibitors. The classes, as is always the case, were somewhat unequal in point of merit; but in most, if, indeed, not in all of them, some good specimens were shown, and in several there were few bad ones. A wet morning rather thinned the company on the Tuesday; but the weather cleared-up as the day advanced, and the Hall soon became thronged with a company so numerous as to show that the prevailing taste for poultry had not failed to extend itself even to the metropolis of our manufactures.

In offering a brief commentary on the different classes the *Spanish* first claim our attention. These were arranged in three classes, numbering together 70 pens, and comprising some of the best birds the kingdom can produce. The coloured *Dorkings*, also, were numerous and highly meritorious, Capt. Hornby carrying off the principal prizes in all three classes. The *Cochins* had some good specimens, but we do not think that they were equal, in the whole, either to the *Spanish* or *Dorkings*. There were a few pens of good *Malays*, but nothing deserving especial notice. The *Game* classes did not muster so strong as we should have expected, but among them were some very fine specimens of this truly English fowl,—in our opinion, the handsomest to look at, and the best for the table, of all the varieties of our domestic poultry. The *Hamburghs* came next, and were fairly represented; but there was nothing very remarkable amongst them, if we except the pen of silver-spangled chickens, to which the first prize in their class was awarded and which were among the very best we ever saw. The *Polands* were both numerous and good, and some of the classes received the commendations of the Judges collectively. Those attractive little favourites, the *Bantams*, were also in good force, and added their mite to the interest of the feathered fowl. A class which we do not remember to have seen before came next, being for “a cock and hen more than one year old, of any variety,” and in it no less than five prizes were offered. This brought together some very fine specimens of almost every variety, and resulted in the first prize being carried-off by a splendid pair of Capt. Hornby's *Spanish*, the two next by *Dorkings*, the fourth by Dr. Gwynne's *Brahma Pootras*, and the fifth by a fine pair of *Andalusians*. The next classes were for single cocks of the different varieties, and they brought together an assemblage of good, bad, and indifferent, in which the latter quality appeared to us to predominate. The *Geese* were not numerous, but there were a few good pens among them. The *Ducks* exhibited nothing very remarkable in point of quality. There were some very fine *Turkies*, the three which obtained the first prize weighing together 54 lbs. A few good pens of “extra stock,” comprising several varieties, and including a pair of the finest *Turkey Poults* we ever remember to have seen, completed the list of 913 pens,

forming together an exhibition of which an older society might justly be proud.

From a very competent Correspondent we have the following additional notes:—

“A new feature (and among the exhibitors of first-class birds it proved a most popular one) was the positive prohibition of sticks, umbrellas, or parasols, in the hands of visitors, all being left in the care of a party provided to take charge of them till the owners were about to leave; the only exception being in favour of the Judges. By this arrangement the comforts of the imprisoned poultry were readily ensured, and not only was the noise occasioned by the screaming of alarmed fowls greatly lessened, but it was pleasing to see the air of quiet contentment that reigned throughout; it would be well if the same course was adopted generally, for much of the *after* indisposition, so much complained of in fowls returned from exhibitions, no doubt proceeds from the constant state of irritation kept up by the perpetual violence of thoughtless visitors. I must give the highest credit to the general management and peculiar cleanliness of the exhibition, and the really untiring efforts of all the committee to carry out all their plans with order and regularity.

“In speaking of the different classes, the *Spanish*, as usual, took precedence on the catalogue; here, too, they did most undoubtedly take precedence of every collection of this variety that has competed at public exhibitions, the rivalry and competition being very far beyond the aggregate; the avenue appropriated to this variety seemed quite the most popular, while many and urgent were the disquisitions here held on the individual merits of particular pens. When it is stated that the far-famed pens of Capt. Hornby, whose oft-repeated successes have been so frequently blazoned in the public prints, here had to doff their laurels to a newcomer, some little idea of the severity of the struggle for mastery in this class may be imagined.* The first prize were, undoubtedly, the best-conditioned fowls we ever saw, and all the most fastidious could desire. In the *Spanish*, Capt Hornby secured no less, however, than three first, a second, and a third prize; whilst in coloured *Dorkings* the superiority of that gentleman's strain was fully apparent,—three first, three second, and a third prize being awarded. Of the coloured *Dorkings* it is impossible to speak more highly than their due, for not only were they in excellent condition, but the most closely matched that we have yet seen. The *White Dorkings* were really but little worthy of admiration; for though a few pens were exceedingly good fowls, they presented that “uncared-for” appearance, the very opposite of what should exist in birds where the competition is a good one, if their owners entertain reasonable desire for success. I felt quite astonished at the obvious degeneracy of the *Buff Cochins*, for though in point of numbers there was nothing to complain of, I in vain looked for those especial favourites that were so deservedly coveted in former days; this it is difficult to account for, except from the fact of too great attention being given by breeders generally to colour, to the almost complete neglect of more essential characteristics. The *Black* class, too, was very indifferent, as also the *Partridge-feathered*, and in each section many prizes were, therefore, withheld. In *White Cochins* some very excellent pens were exhibited, and the fowls of G. Peters, Esq., of Birmingham, were exceedingly successful. In the *Game* classes the competition was necessarily very closely contended, this breed of fowls having been, for more than two centuries, the most carefully managed in the surrounding districts of any part of the United Kingdom: “the old Derby breed” (of black-breasted reds) having, in the days when the cruel practice of cock-fighting was in the ascendant, proved their capabilities in the cockpit of superiority, as they now did in the exhibition-pen. Never were there more beautifully-feathered, highly-conditioned, or perfect specimens brought into competition.

“In *Amateur Prizes* (the award being to a single cock), the specimens were deserving of all praise, and found ready purchasers at liberal prizes,—one twelve guineas,—on which a very considerable advance was afterwards offered to the purchaser, but refused. Several other single birds were also eagerly sought for by amateurs, so that most changed hands.

* It is but fair to state that Capt. Hornby's pen of best birds were not there.

The White Aylesbury and Rouen Ducks mustered strongly, and showed in good feather; but in the latter variety, the deterioration, both in form and colour, from such as a few years back figured A 1 at the Birmingham Shows, and again and again were subjected to the ordeal of the scales by the judges, and varied from 20½ lbs. to 31 lbs. the four, according to their condition, convinced the most sceptical that *new blood* is here wanting, for certainly *great size* was (with the colours of the pure Wild Duck) indicative of *original purity*, and ought, if possible, to be maintained."

The Judges were E. Bond, Esq., Leeds; T. Challoner, Esq., Worksoy; E. Hewitt, Esq., Birmingham; W. Symonds, Esq., Weymouth; and W. Trotter, Esq., Newcastle-upon-Tyne.

We annex the list of prizes awarded by the Judges:—

Class 1.—**SPANISH.**—*Cock and two Hens.*—14. First prize, John Harrison, jun., Snelston Hall, Derbyshire. 3. Second prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 7. Third prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. Class 2.—*Cockerel and three Pullets.*—30. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 38. Second prize, Daniel Parsons, Cuerden, near Preston. 47. Third prize, William Ellison, junr., Low Sizergh, near Minthorpe. Class 3.—*Cockerel and one Pullet.*—49. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 51. Second prize, Henry Openshaw, Oak Hill, Prestwich, near Manchester. 58. Third prize, G. W. Hardy, Warrington.

Class 4.—**DORKING (White).**—*Cock and two Hens.*—78. First prize, Joseph Jennens, Moseley, Birmingham. 74. Second prize, George Fell, Springfield, Warrington. 77. Third prize, Francis Edwards, Bulstrode Park, Buckinghamshire. Class 5.—*Cockerel and three Pullets.*—79. Second prize, Christopher Rawson, The Hurst, Walton-on-Thames.

Class 6.—**DORKING (Coloured).**—*Cock and two Hens.*—88. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 82. Second prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 94. Third prize, E. Lister, Cassia Lodge, near Over, Cheshire. Class 7.—*Cockerel and three Pullets.*—104. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 98. Second prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 116. Third prize, Mrs. Thomas Townley Parker, Astley Hall, Chorley.

Class 8.—**DORKING (Of any colour).**—*Cockerel and one Pullet.*—119. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 136. Second prize, E. Lister, Cassia Lodge, Over, Cheshire. 129. Third prize, Daniel Parsons, Cuerden, near Preston.

Class 9.—**COCHIN-CHINA (Cinnamon and Buff).**—*Cock and two Hens.*—145. First prize, Mrs. Ambler, Watkinson Hall, near Halifax. 160. Second prize, Mrs. Lydia C. Stow, Bredon, near Tewksbury. 144. Third prize, George C. Adkins, Edgbaston, Birmingham. Class 10.—*Cockerel and three Pullets.*—193. First prize, Mrs. Ambler, Watkinson Hall, near Halifax. 171. Second prize, H. W. Collinson, 47, Castle-street, Southwark. 239. Third prize, Miss Rachel Walker, Clipston Rectory, Northamptonshire.

Class 11.—**COCHIN-CHINA (Brown and Partridge-feathered).**—*Cock and two Hens.*—260. Second prize, George C. Adkins, Edgbaston, Birmingham. 261. Third prize, Colonel Clowes, Froxmer Court, Worcestershire. Class 12.—*Cockerel and three Pullets.*—270. Second prize, William Wanklyn, jun., Greenbank, Bury. 272. Third prize, Thomas Bridges, Croydon, Surrey.

Class 13.—**COCHIN-CHINA (White).**—*Cock and two Hens.*—291. First prize, George C. Peters, Charlton Cottage, Moseley, near Birmingham. 292. Second prize, Benjamin Holmes, 112, New-street, Birmingham. 288. Third prize, George Boothby, Holme Cottage, Louth, Lincolnshire. Class 14.—*Cockerel and three Pullets.*—317. First prize, George C. Peters, Charlton Cottage, Moseley, near Birmingham. 316. Second prize, George C. Peters, Charlton Cottage, Moseley, near Birmingham. 294. Third prize, Christopher Rawson, The Hurst, Walton-on-Thames.

Class 15.—**COCHIN-CHINA (Black).**—*Cock and two Hens.*—324. Second prize, Henry Parker, Church Lane, Handsworth, near Birmingham. Class 16.—*Cockerel and three Pullets.*—326. First prize, William Wanklyn, junr., Greenbank, Bury. 328. Second prize, W. C. Gwynne, M.D., Sandbach, Cheshire. 325. Third prize, Mrs. Lydia C. Stow, Bredon, near Tewksbury.

Class 17.—**COCHIN-CHINA (Of any colour).**—*Cockerel and one Pullet.*—341. First prize, Henry Ambler, Watkinson Hall, near Halifax. 383. Second prize, George C. Peters, Charlton Cottage, Moseley, near Birmingham. 368. Third prize, Charles Bainbridge, 16, Old Meeting-street, Birmingham.

Class 18.—**MALAY.**—*Cock and two Hens.*—393. First prize, Gervase Oldham, Whitacre, near Coleshill, Warwickshire. 396. Second prize, Gervase Oldham, Whitacre, near Coleshill, Warwickshire. Class 19.—*Cockerel and three Pullets.*—401. First prize, Gervase Oldham, Whitacre, near Coleshill, Warwickshire. 403. Second prize, Gervase Oldham.

Class 20.—**GAME FOWL (White and Piles).**—*Cock and two Hens.*—404. First prize, W. and J. H. Parkes, Wellington Place, Highgate, Birmingham. 406. Second prize, Francis S. Bullock, Handsworth, near Birmingham. 410. Third prize, Rev. Thomas Lyon Fellowes, Beighton Rectory, Acle, Norfolk. Class 21.—*Cockerel and three Pullets.*—417. First prize, Arthur Dakin, Birmingham. 413. Second prize, Henry Ambler, Watkinson Hall, Halifax.

Class 22.—**GAME FOWL (Black-breasted and other Reds).**—*Cockerel and two Hens.*—418. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 430. Second prize, Robert Brookhouse, Cheddle, Cheshire. 433. Third prize, Sam Armitage, Thornton-road,

Bradford. Class 23.—*Cockerel and three Pullets.*—436. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 438. Second prize, Geo. C. Adkins, Edgbaston, Birmingham.

Class 24.—**GAME FOWL (Black and Brassy-winged, except Greys).**—*Cock and two Hens.*—450. First prize, Joseph Jennens, Moseley, Birmingham. 451. Second prize, Sam Armitage, Thornton-road, Bradford. 448. Third prize, Samuel T. Smith, Madeley, Shropshire. Class 25.—*Cockerel and three Pullets.*—456. First prize, Samuel T. Smith, Madeley, Shropshire. 457. Second prize, Joseph Jennens, Moseley, Birmingham.

Class 26.—**GAME FOWL (Duckwings and other Greys and Blues).**—*Cock and two Hens.*—459. First prize, Mrs. Ambler, Watkinson Hall, near Halifax. 466. Second prize, Sam Armitage, Thornton-road, Bradford. 462. Second prize, Henry Worrall, Knotty Ash House, Liverpool. Class 27.—*Cockerel and three Pullets.*—468. First prize, Dan Leeming, Blackwood House, Halifax. 471. Second prize, John Adwen, Kebroyd, near Halifax.

Class 28.—**GOLDEN-PENCILLED HAMBURGHS.**—*Cock and two Hens.*—481. First prize, Josiah B. Chune, Croakdale, Shropshire. 474. Second prize, Captain Windham Hornby, Knowsley Cottage, Prescot. 483. Third prize, Charles John Mold, Wingfield Park, Belper. Class 29.—*Cockerel and three Pullets.*—491. First prize, Henry W. Heaton, Copley Wood, near Halifax. 493. Second prize, Rev. Thomas Lyon Fellowes, Beighton Rectory, Acle, Norfolk.

Class 30.—**GOLDEN-SPANGLED HAMBURGHS.**—*Cock and two Hens.*—504. First prize, James Dixon, Bradford. 499. Second prize, George C. Adkins, Edgbaston, Birmingham. 496. Third prize, Joseph Thorpe, Symister Lane, near Middleton. Class 31.—*Cockerel and three Pullets.*—526. First prize, George Fell, Springfield, Warrington. 516. Second prize, John Andrews, Waterhouses, Ashton-under-Lyne.

Class 32.—**SILVER-PENCILLED HAMBURGHS.**—*Cock and two Hens.*—546. First prize, James Dixon, Bradford, Yorkshire. 537. Second prize, M. H. Broadhead, Stubbin, Holmfirth, Yorkshire. 531. Third prize, Jeffery Ashcroft, Waterloo, near Ashton-under-Lyne. (Cottager.) Class 33.—*Cockerel and three Pullets.*—549. First prize, Thomas Haslam, Symister Lane, near Middleton. (Cottager.) 555. Second prize, Joseph Crossley, Lane Top, Sutton, near Cross Hills, Yorkshire.

Class 34.—**SILVER-SPANGLED HAMBURGHS.**—*Cock and two Hens.*—569. First prize, James Dixon, Bradford, Yorkshire. 561. Second prize, Jeffery Ashcroft, Waterloo, near Ashton-under-Lyne. 565. Third prize, H. M. Broadhead, Stubbin, Holmfirth, Yorkshire. Class 35.—*Cockerel and three Pullets.*—588. First prize, Matthew Hedley, Higher Broughton, Manchester. 576. Second prize, Thomas Hall, Denton Lane, Fox Denton, near Oldham. (Cottager.)

Class 36.—**POLAND FOWL (Black, with White Crests).**—*Cock and two Hens.*—597. First prize, George C. Adkins, Edgbaston, Birmingham. 604. Second prize, John T. Hibbert, Urnston, near Manchester. 598. Third prize, Joseph Conyers, 42, Bort Lane, Leeds. Class 37.—*Cockerel and three Pullets.*—609. First prize, Francis Edwards, Bulstrode Park, Buckinghamshire. 611. Second prize, Mrs. C. H. Horsfall, Duffield Bank House, Derby. (The class commended.)

Class 38.—**POLAND FOWL (Golden).**—*Cock and two Hens.*—613. First prize, Christopher Rawson, The Hurst, Walton-on-Thames. 621. Second prize, S. C. and C. N. Baker, Half-moon Passage, Gracechurch-street, London. 617. Third prize, Joseph Conyers, 42, Bort Lane, Leeds. Class 39.—*Cockerel and three Pullets.*—632. First prize, James Whitaker, Clare Hall, Huddersfield. 627. Second prize, William Cox, Brailsford Hall, Derby.

Class 40.—**POLAND FOWL (Silver).**—*Cock and two Hens.*—638. First prize, James F. Greenhall, Crapenhall Hall, Warrington. 635. Second prize, Christopher Rawson, The Hurst, Walton-on-Thames. 640. Third prize, George C. Adkins, Edgbaston, near Birmingham. Class 41.—*Cockerel and three Pullets.*—646. First prize, W. G. Vivian, Singleton, Swansea.

Class 42.—**BANTAMS (Gold-laced).**—*Cock and two Hens, or Cockerel and Pullet.*—652. First prize, George C. Adkins, Edgbaston, Birmingham. 656. Second prize, Mrs. Hosier Williams, Eaton Mascott, Shrewsbury.

Class 43.—**BANTAMS (Silver-laced).**—*Cock and two Hens, or Cockerel and Pullet.*—664. First prize, George Boothby, Holme Cottage, Louth, Lincolnshire. 665. Second prize, Mrs. Hosier Williams, Eaton Mascott, Shrewsbury.

Class 44.—**BANTAMS (Black).**—*Cock and two Hens, or Cockerel and Pullet.*—670. First prize, Gilbert Winter Moss, Liverpool. 674. Second prize, Gilbert Winter Moss, Liverpool.

Class 45.—**BANTAMS (White).**—*Cock and two Hens, or Cockerel and Pullet.*—678. First prize, George C. Adkins, Edgbaston, Birmingham. 687. Second prize, Edward Alison, jun., Park Hall, near Chorley.

Class 46.—**BANTAMS (Any other variety).**—*Cock and two Hens, or Cockerel and Pullet.*—690. First prize, Mrs. Hosier Williams, Eaton Mascott, Shrewsbury. 689. Second prize, George C. Adkins, Edgbaston, Birmingham.

Class 47.—**COCK AND HEN.**—*More than one-year-old of any variety.*—707. (Spanish.) First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 697. (Dorking.) Second prize, Mrs. Thomas Townley Parker, Astley Hall, Chorley. 701. (Dorking.) Third prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescot. 706. (Brahma Pootra.) Fourth prize, W. C. Gwynne, M.D., Sandbach, Cheshire. 710. (Andalusian.) Fifth prize, Colonel Clowes, Froxmer Court, Worcestershire.

Class 48.—**AMATEUR PRIZES.—Cocks of any age.**—741. For the best single Spanish cock. E. W. Wilmot, Hulme Warfield, Congleton. 746. For the best single Cochin cock. Robert Brookhouse, Cheddle, Cheshire. 773. For the best single Dorking cock. John Staley, North Collingham, near Newark. 779. For the best single Game cock. James Fletcher, Ringley, near Bolton. 793. For the best single Hamburg cock. James Partington, Symister Lane, near Middleton. (Cottager.)

Class 49.—*GEESSE*.—*Gander and two Geese*.—801. First prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescott. 807. Second prize, William Charlton, Seadley. 804. Third prize, Mrs. Thomas Townley Parker, Astley Hall, Chorley.

Class 50.—*DUCKS* (White Aylesbury).—*Drake and three Ducks*.—810. First prize, Christopher Rawson, The Hurst, Walton-on-Thames. 827. Second prize, Mrs. Lydia C. Stow, Bredon, near Tewsbury. 815. Third prize, John Hunt, Barrow, near Ulverston.

Class 51.—*DUCKS* (Rouen).—*Drake and three Ducks*.—834. First prize, Henry Worrall, Knotty Ash House, Liverpool. 839. Second prize, R. E. Ashton, Ramsbottom, near Bury. 836. Third prize, Thomas Statter, Stand Hall, Pilkington.

Class 52.—*DUCKS* (Of any other variety).—*Drake and three Ducks*.—847. First prize, Henry Worrall, Knotty Ash House, Liverpool. (Call Ducks.) 848. Second prize, Miss Clifton, Whittington, near Worcester. (Black East Indian.) 861. Third prize, William Hodgkinson, Gough Hill, Birmingham. (Muscovy.)

Class 53.—*TURKEYS*.—*Turkey Cock and two Hens*.—871. First prize, Joseph Conyers, 42, Boar Lane, Leeds. 866. Second prize, Captain Windham Hornby, R.N., Knowsley Cottage, Prescott. 870. Third prize, E. H. Wilmot, Hulme-Warfield, Congleton.

EXTRA STOCK.—898. Prize. Rev. Thomas Lyon Fellowes, Beighton Rectory, Acle, Norfolk. (Black Hamburgs.) 909. Prize. Thomas Whittington, jun., Wooton Wawen, near Henley-in-Arden. (Andalusian.)

ST. LAWRENCE VINEYARD.

AMONGST the many establishments worthy of the horticulturist's attention in the Island of Jersey is a Vineyard situate on the south-western side of the island, and on the same side of the St. Lawrence Hill, about two and a half miles from the town of St. Helier's, and overlooking the beautiful Bay of St. Aubin's, the property of a very worthy and spirited gentleman, who has devoted much of his time, during the last seven years, in turning a "barren cotil and furze bank" into a valuable and profitable piece of property. The crops now produced being turned to very good account, through the many advantages the peculiar position of the property offers, and the good judgment which has been displayed by the proprietor in availing himself of those advantages.

The whole area of this establishment is about two English acres, which is terraced and faced according to the facing of the hill slope. S.E. and S.W., but principally S.W., the upper portion of which is covered with glass constructions, which are devoted exclusively to the cultivation of the Vine; the measured length of which is more than half a mile; which are heated with boilers and hot-water pipes of Messrs. Burbidge and Healy's construction; the capacity of which system is more fully developed here than in any other establishment I have had the advantage of visiting; for the pipes, in several instances, are fixed on an inclined plane, and owing to the irregularity of the surface of the ground, the extreme ends of the pipes are many feet above the level of the boilers, and the houses being from two to three hundred feet long, the water in the pipes has to flow a great length up hill before it reaches the return pipe to the boiler; and the pipes at the extreme end, near the expansion box, are often much warmer than nearer the boiler, maintaining in the whole a beautiful and congenial heat throughout the house or houses, which are, of course, heated in compartments, and by different boilers.

The worthy proprietor, who feels much interested in the cultivation of the vine, himself devotes much personal attention to the manner in which the manual labour is performed, and the result of such attention must be very gratifying to him, for the crops produced during the seasons 1852 and 1853 have been prodigious, and have surpassed all expectation, five to six tons of well-coloured and finely-flavoured grapes having been cut in 1852, and seven to eight tons in 1853; the greatest portion of which have been sold in the London markets, realizing a good profit to the salesman; a living to the individual employed in conveying them to and fro, in his capacity as "middleman;" and remuneration, with interest, to the employer and proprietor for his outlay and incidental expenses; who has, on the other hand, the gratification of employing, advantageously, several hands in attending to the houses, Vines, grounds, &c., and preparing the fruit for the market. So much for the wise application of leisure time, at a leisure period of life; the proprietor being a man in easy circumstances, inde-

pendent of the establishment, which has been a source of recreation and amusement, during the last few years, to his ingenious and persevering mind, and now proves a valuable investment of capital, independent of the moral source of gratification arising from the amount of good it does to others; and the proof that, "Without steadiness of purpose no real good can be realized."

But again, there are many things which would take a thoughtful gardener's (either amateur or professional) attention in walking over this establishment. One striking peculiarity is, that more than half of the Vines are planted in the borders at the backs of the houses, which are on a level with the top of this wall, and are trained down the rafters instead of up, which, to reason, seems the actual perversion of Dame Nature's laws respecting the flow and descent of sap; but whether it is the nature of the dressing given to the borders, the natural vigour of the Vine, or the mode of pruning and management (each plant not being allowed more than a single rod, which is most unmercifully stumped in every season, not allowing a spur or an eye to remain visible, and then being painted over with a coat of "lime, soft soap, and sulphur vivum mixed," to boot), I know not; but the Vines seem to thrive well under it, and they are close or short-jointed, and when excited to growth in winter or early spring; December, January, and February, being the periods at which they are started, so as to ripen the fruit in rotation, they break at the joints or bends of the wood, with three, four, and five eyes or shoots, giving striking evidence of health and vigour; the strongest one or two of these shoots are allowed to remain, according to the requirements of that particular part of the roof, and the remainder are rubbed off with the thumb.

These being the two most marked peculiarities respecting the culture of the plants themselves, which are principally of the *Black Hamburg* and *Muscat of Alexandria* varieties, it would be wasting most of your readers time to recapitulate the whole process of Vine culture. We all know, or think we know, a good deal about these simple things, and "Mr. Annus," having been the first pruner of vines, or having accidentally nipped off the tops of the young shoots, and attracted man's attention to what he had not before noticed, I must leave to more able heads and hands the development of the aforementioned personage's theory, merely specifying, that the topping of the young shoots, and the thinning of the berries on the branches, is here performed with far less ceremony and expenditure of time than is usually bestowed on such operations.

The Grapes ripen very early here, being in abundance during the months of May, June, and July, and the Vines are then drawn out of the houses, or the lights are taken off, after the fruit is gathered, so as to perfect the development of the plants growth for the season, to ripen the wood and prepare the plants to be resubjected to similar treatment the ensuing year.

It was a question in my mind, for some years after seeing this practice commenced, "That turning the Vines downwards could not possibly answer for any length of time;" and I do not doubt that many of your readers may enter into the same line of thought. I considered that "Art might assist Nature; but that the perversion of Nature's ways must end in disappointment." Such were my thoughts; but here we may see the perversion of Nature made Nature's assistant, and turned to the best possible account, by answering all the purposes required of it. Shortness of joint in wood, prolific bearing, apparent health and vigour of plant, whilst the foresight displayed in so planting them provided a body of good mould between the back wall and the slope of the hill, for the nourishment and support which could not have been obtained by equally easy and convenient means in any other way in this particular locality.

As it may be readily supposed, there is a large quantity of rain falls on the roofs of such a surface of houses and sideling ground; and that the run of such quantities of water would be highly injurious to the terraces and property beneath; this the proprietor has prepared himself to meet by having a number of large circular cisterns built on the surface of the grounds with bricks and cement, to receive the water from each of the roofs, each of which is supplied with a large watercock, at or near the bottom, which is turned on when the rains are heavy, and these cisterns

falling so that the overplus water may be conveyed through pipes to the lower terraces, and thence to one immense cistern. By these means, all the rain falling, which could in any way be injurious to the property, or among the neighbours below, is saved, and may, should circumstances require it, be forced up to the highest part of the premises, to water the Vine borders, &c.

I should have said enough respecting this ornamental and useful place to have called the attention of all horticulturists towards it, but I cannot stop yet; my thread is not run out; and here I must inform your readers, I have seen *Hawthornden* and *Ribston Pippin* Apples ripe in August; Apricots by hundreds; Plums and Pears by bushels; and small fruit by the cwt. Enough fruit is now grown on this cotil and once barren piece of ground to supply a whole regiment, 1000 strong, and every man to have as much as would do him good during the season, besides flowers growing and thriving in the most exuberant state. Here I recollect seeing *Digitalis purpurea*, or the Fox-glove, growing in the most beautiful variety, from pure white to the original purple, and some with the most beautifully spotted throats in almost every intermediate shade; the central spikes of bloom being from seven to eight feet high, with from thirty to forty minor and lateral shoots, making altogether the most splendid pyramids of bloom that can possibly be imagined. The *Double Yellow Provence Rose* also thrives well here a very strong plant; growing at the foot of one of the flights of steps, producing abundance of splendid, large, yellow flowers, as large and as double as the *Old Provence Rose*. This seems to be a peculiar plant, outwitting the most witty of gardeners as to the best mode of cultivating it. It seems as if it would only grow where it liked. Here it thrives in the greatest luxuriance and beauty. The Fuchsias, Pæonias, Roses, and most other flowering shrubs and plants may here be seen thriving with the same luxuriance of growth and abundance of bloom. I would recommend all the lovers of horticulture and floriculture visiting the Island of Jersey not to leave it without endeavouring to make time for a visit to this establishment.—C. B. S., *Jersey*.

BANTAMS AS RECENTLY SHOWN.

(Concluded from page 345.)

WHATEVER the causes to which we should assign the falling off in the "laced" birds that we recently complained of, it is satisfactory to observe that other varieties have, at the same time, more than held their own. In the "black" Bantam Class, for instance, birds of the highest merit have been abundant, and both at Leeds and Birmingham pens of these birds have been shown in the year just passed that would have stood the severest criticism, and it may be fairly said, that throughout the regions of Poultry Shows these have been eminently good. No complaints are heard of the unfertile character of the black Bantam's eggs, hardy, vigorous little balls of dark fluffy down are always abundant, and neither in chickenhood or maturity, under ordinary care, need we feel anxious about their well doing. But all this is widely different to what takes place with the subjects of our last paper, viz., the laced birds, both gold and silver. Yet this might well be expected, since, in the last case, the characteristic features of the healthy male bird are deemed blots and blemishes, and our anxious and continued efforts are devoted to their eradication as far as our powers go. But look at the parent of our black Bantam brood—a vigorous, high-couraged little fellow, with so much masculine energy as enables him to lord it over fowls twice his size, and possessing his male attire as brilliantly relieved from that of his mate as we find in black fowls of any kind.

The tail is here left an open question, since, although there are many by whom the preference would be given to one of rather a square character, no one, we think, should find fault with the most ample sickle-feather, provided there be no undue excess of size or loss of symmetry. Another point, on which we have heard various opinions expressed, concerns the ear-lobe, which, to our own eye, appears best when white, or but slightly blushed; good

judges, however, are found who do not object to its being red, but when this is the case, the loss of the contrast, so strongly exemplified in the black Spanish, or the black Hamburg, seem to deteriorate from the general effect.

"White" Bantams, also, have progressed rapidly of late, and the coarse birds that were frequently seen in former years, more allied apparently to the white Dorking than belonging to the family we are now speaking of, are rarely thrust forward for judicial disapprobation. The July Exhibition, at Plymouth, had some excellent birds in this class, perfect in form as well as feather; and at Birmingham, also, they came forward with equal credit. Here we first come to a question relative to the "comb," for in the laced and black varieties there can be no question but that that appendage should be in the rose form. The single comb, however, is said to be admissible in white Bantams, though, whenever it is substituted for the former, the bird appears to disadvantage, in our eyes, to fully the same extent as with the white Dorking. The compactness of the rose-comb harmonises with the general character and form of these diminutive birds; and both here, as in the case of other rose-combed fowls, the intensity in colour of the comb appears to exceed that of single-combed specimens. May not this be, perhaps, attributable to the formation of the first so clearly resembling the coral, from which we are accustomed to derive an epithet for the comb generally? Be this as it may, our verdict goes unhesitatingly for rose-combed white Bantams, though admitting the excellence in other points of very many single-combed pens that have been recently exhibited.

Considerable surprise was felt by many exhibitors at a decision in the Bantam classes at the recent Metropolitan Exhibition. We allude to the first prize awarded to a pen of "booted and tufted white Bantams," which were placed over the head of several pens of the clean-legged birds, to which last custom has hitherto limited the class in question. According to the wording of the prize-list, the Judges might have felt themselves bound to award the prize to any birds of that "colour" that might seem to them best to deserve the honour; and, in saying this, it must be remembered that we are not here discussing the question of whether they were the best birds of their class, or not; but, simply, whether they were admissible, or otherwise. The clean-legged white Bantam has, unquestionably, been generally considered as the best form of that bird, and nothing of recent introduction has induced us to change that opinion. The "booted" birds have, also, during the past year, been assigned, in many instances, a separate class, where the birds possessing this peculiarity, no matter of what colour, should all be arranged. The fact of prizes for "booted, or feathered Bantams" would at once disqualify such specimens when shown in the other classes that have previously been occupied exclusively by the clean-legged birds; but it is by no means equally clear that the former would be necessarily included among those "of any other variety."

Beyond the four varieties already enumerated, the competitors for fame among the other Bantams were, till the last year or so, comparatively scarce; nor, indeed, were the merits of such as did appear sufficient to make us anxious for their further acquaintance. The period over which this remark is extended is not designed to go back to those times, now some twenty or thirty years back, when the booted Bantams, and the unfortunate Creepers and Jumpers were, among others, objects of popular favour; but we refer only to the later epoch of Poultry Exhibitions, dating, perhaps, from their first inauguration at Birmingham. Among the miscellany that the class for odds and ends frequently submits to our notice, the "Spangled" birds are frequently seen, but these are rarely satisfactory, too commonly reminding us of imperfect lacing, which is degenerating into spottiness, rather than showing the clear ground colour and distinct spangle which should be required here as rigorously as with the Hamburgs or Polish.

The "Game Bantams" have had among their number some specimens of extreme beauty, especially those miniature Duckwings so deservedly the objects of general admiration at the Metropolitan Exhibition in the early part of 1853.

Reduced *fac-similes* of the black-breasted and other reds have also been successful on several occasions, and both

these promise well for supplying any gap that the failure of other hitherto more fancied breeds may possibly create.

"*Mottled Black and White*," and "*tufted*" Bantams are occasionally claimants for distinction, but rarely in such form as would encourage their owners to further efforts. Bundles of loose feathers, termed "*Tartarian or Chinese*" Bantams are only remarkable for the absence of every feature that is regarded as meritorious in this family, especially symmetrical figure and closeness of feather.

The old "*Yellow or Nankin*" Bantam has again appeared in public; and if the colours are not those that have most accorded with the general taste, well-selected specimens have had sufficient recommendation, in point of good looks, to give them additional value in the eyes of those who are partial to them from their excellence as mothers.

Partridge Bantams, again, have been shown in very good form, and in some instances, in form, as well as plumage, have partially justified their appellation, though we are decidedly adverse to that system of nomenclature which has given us these with the "*pheasant*" and the "*ostrich*" fowl of older writers, and the *Plumigen* fowl of our own time.

Our summary, therefore, of "*Bantams as recently shown*," is highly favourable to the class generally; and wherever, as in the case of the laced birds, deterioration has been evidenced, the cause seems manifest, though the remedy, so long, at least, as the breeder's object and practice continues as now, may be long sought in vain.

POLMAISE HEATING.

I BEG the use of a small space in THE COTTAGE GARDENER, to reply to Mr. Golightly, respecting that most simple and yet most economical system of heating horticultural structures with which I am acquainted—the Polmaise—which Mr. Golightly so hastily condemns, and which I so uphold as the best system with which I am acquainted.

I am at this time working old flues and hot-water as well as the Polmaise, which, if erected on a good principle, is the most economical as regards fuel and attendance over any other that ever I worked. As to the air of the house being charged with an unpleasant gas, I can assure him it is not the case with me, as it neither roasts, singes, scorches, nor blotches the most tender-leaved plants of the tropics. If he were to see how orchidaceous plants delight in this sweet, pure atmosphere, how their most delicate roots ramble and hang about, both from their baskets and blocks, he would, I think, be convinced that this is the best system of heating; and that the gardening world stands deeply indebted to the late Mr. Meek for making this most important and valuable discovery, and for publishing it to the world.

It was in the year 1846 that we erected a stove heated on the above principle, and I am perfectly satisfied with it, and prefer it to any heated by hot-water. Mr. Golightly states, that the bed or bottom-heat, and the internal atmosphere of the house, are heated simultaneously; and that we cannot heat one independent of the other. I beg to differ from him; for by closing the ventilators of the hot-air chambers we stop the communication with the atmosphere of the house only; so, by gradually opening the ventilators, there is a surplus charge of sweet hot-air to be diffused through the house, which, on a cold frosty night, I find a great advantage.

As to the nursery that Mr. Golightly describes it to be for red spider, thrips, and scale, I can with confidence assure him I have none of those intruders.

In conclusion, I wish to remind Mr. Golightly that all systems are not perfect, and liable to accident. Flues may choke, boilers may burst, the joints of pipes may give way, and foul air may get in the pipes and disarrange the whole system; and all this I have found, to my mortification, on a cold, sharp, frosty morning. Again, when the water boils, how unpleasant it is to find your house full of steam, with the hot-water flying about in all directions in such frosty nights we have lately experienced. — HENRY CRADDOCK, *Keresley, Coventry*.

HARDY BORDER PLANTS.

(Continued from page 348.)

ACONITUM ANTHORA.

THE WHOLESOME WOLFSEANE OR MONKSHOOD.

I KNOW not for why this species should be called the Wholesome Monkshood, when, no doubt, it is as poisonous as any of the whole showy family.* This is, certainly, a choice plant, and one of the prettiest of its whole genus. It should be planted in some of the best open situations in the flower borders. It is a native of the Pyrenees, and was introduced into this country in the year 1596. It is altogether a more dwarf and smaller plant than the generality of this family. Its blossoms are showy and large, of a yellow or pale yellow colour; its leaves are finely and many cut, the segments very narrow and pointed. Its stems rise from one-and-a-half foot to two feet and-a-half in height, according to the soil and situation it is growing in. Therefore it makes a most desirable front or second row plant in the borders. It is readily increased by root division, in the spring months, when it first shows its leaves; and as our practice always is, when dressing of the flower-beds, to have a barrowful of nice earth at our heels, such as turfy-loam, and leaf-mould, or the like, from the frame ground, and when we come to a choice plant like this, we, of course, *finger* everything away round about its crown that is like a fallen leaf, weed, or slug. We then consider whether the bunch has become too large or straggling, and if so, we carefully lessen it with the fork, perhaps by inserting the fork through the centre of the bunch, leaving the best placed half to remain. Then in goes the spade to the wheelbarrow for a little fresh earth to fill up the deficiency caused by the removal of half the plant. This strengthens and keeps the main bunch up to the mark of perfection, whilst the part taken away may either be to form a bunch in some other part of the garden, or borders; or this, instead of being to form another single bunch, may be divided into many pieces. This, of course, is as required. Again, if we find a choice plant like this seems to have tired of its place or spot from long standing, we up with it altogether. This affords a good opportunity for increase by division. In this case we either change a good portion of the earth, or change its place with another plant of the same height and colour, being at the same time ever mindful to work up the soil well, adding to it a spadeful or two of fresh soil from the wheelbarrow. T. W.

SHANGHAES THE EARLIEST LAYERS.— PRODUCE OF JERSEY COWS.

You have occasionally requested your readers to contribute the result of their experience in poultry and other matters. The following statement shows the value of a Shanghae fowl over others, for laying, at this season of the year.

In *May*, I hatched, under two hens, fourteen Shanghae pullets, and five Spanish pullets, besides nine cock Shanghae birds: and in *August*, I purchased five Speckled Dorkings of our two best dealers in London: they were extremely fine birds, and several months older than the Shanghaes. It may surprise some of your readers, but the following statement is correct.

Eggs laid by Shanghae pullets, from Nov. 12, 1853,	
to Jan. 23, 1854	321!
Ditto by Dorkings	11!!
Ditto by Spanish	2!!

The Spanish laid for the first time yesterday, (Jan. 22nd;) and the Dorkings on Dec. 20. Eggs have been selling in our neighbourhood at eight for a shilling; to a large family, like mine, the Shanghaes have, therefore, been very valuable. I ought to add, that the fowls have all been kept alike.

Perhaps it may also interest some of your readers to know the produce obtained in England from five real *Jersey Cows*, from Jan. 1, 1853, to Jan. 1, 1854. We have made of butter 1227 lbs. 11 ozs., besides the milk used in a family with six little children, and that consumed during the weaning of

* It was many years since believed to be an antidote to the poisonous species, and these being called *Thora*, it was named *Anthora* or *Antithora*. It is certainly poisonous, though not so violent in its effects as the other kinds. — ED. C. G.

two calves. We scald our milk *over gas*, on the Devonshire plan; and feed the Cows on Swedes and hay, but have never any ill flavour in the butter. We could dispose of much more butter than we make.—SRES (*a Wills Clergyman*).

TO CORRESPONDENTS.

PLAN OF PEACH HOUSE (T.).—It would not do often to engrave plans, but if you tell us your situation, and what you purpose, we will advise. The subject has frequently been referred to, and the simplest is the best. The best Peaches are generally obtained from houses where the trees take the direction of the glass, being trained fifteen or eighteen inches from it.

CONTEMPLATED GREENHOUSE (Omagh).—The sun does not shine after ten o'clock, a.m., upon your ground. We should not like to advise you, though we have no doubt you would grow such things as Camellias, Azaleas, and even Geraniums, and Heaths, if you gave them plenty of air, and all the light you could. The plants would have the advantage of refracted light, even though the sun did not shine after ten, a.m. The worst of it would be in winter, as your plants would hardly have a ray at all, but they would be no worse than most plants facing the south this season, as the hours of sunshine might soon be counted. Had we the house, up it should go, maugre all disappointments in some things, but we have not proved plants in such a place for a twelvemonth, with the exception of Camellias, Fuchsias, and Azaleas, and they were set out-of-doors for a couple of months, about August. Unless you have abundance of air, Pelargoniums, &c., would get leggy.

RUSSIAN ANEMONE (A recent Subscriber).—We presume it requires no particular treatment, but we are not sure which it is.

SEEDLING PANSIES (Ibid).—Wintered in a frame, should have abundance of air in favourable weather, be well hardened off, and be planted out in rich, mellow, well aired ground, about the end of March, or the beginning of April. If the weather is rather mild do it earlier, and protect after planting if it should be severe on a sudden.

ANDALUSIAN LAUGHING PIGEONS (Durham).—With regard to the Laughing Pigeons, so little kept by fanciers, the fullest account of these birds is in Mr. Eaton's work on "Pigeons," p. 71. "This Pigeon is about the size of middling Runts, and much of the same make; and I am informed has a very bright pearl eye, almost white; as for its feather, it is red-mottled, and some tell me that they have seen blues. They are said to come from the Holy Land, near Jerusalem. When the cock plays to his hen, he has a hoarse coo, not unlike the gurgling of a bottle of water when poured out, and then makes a noise which very much imitates a soft laughter, and from thence this bird has its name." We think the gentlemen who keep the Laughing Pigeons should also keep the Trumpeter. Both birds being of the Runtish kind, and having such strange voices, and if a cross comes from these birds, who knows but their offspring might laugh and trumpet in the same bird.

JACOBIN PIGEONS (R. Stone).—You mention that you bought a pair of Jacobins, but you do not mention whether they are two cocks or two hens. I presume you bought them for cock and hen, and your complaint is that they do not match up. The probability is, that if they are two cocks or two hens they never will, although the experienced fanciers frequently witness two hens matching up, laying four eggs in the nest, relieving each other in sitting; the eggs, as a matter of course, coming to nothing, although plenty of cocks are in the loft. The same will take place with regard to the cocks—two cocks forsaking their hens, matching up, sitting, although no eggs in the pan, and relieving each other in their sitting. It never struck me to observe if the cocks would sit at night. You must prove your Jacobins thus, putting a forward hen to each, and if they play up, then you have two cocks; on the contrary, try two cocks to the Jacobins, and if they match up, then you have two hens. If, after all, the pair should be cock and hen, place them in a pen with lath partitions between them, feed and water them out of the same utensils: feed them on small beans, and give them a good supply of hemp-seed; and when you observe the hen sweep her tail, and shew, as it is called, to the cock, and as she plays in the other pen or basket, you may put her to him, and they will soon be matched.—J. M. E.

WHITE BANTAMS (Julia Williams, and A White Bantam).—Both these enquiries may be answered together. The fact of the first prize in the class for White Bantams having been awarded, at the late Metropolitan Show, to a pair of rough-legged, tufted, white birds, has created some surprise, and fault has consequently been found with the judges for this decision. But it appears to us that these gentlemen would be bound by the wording of the prize-list, and that no matter whether the birds in question were booted or tufted, the fact of their colour entitled them to be shown in that class. The question of how far they merited the prize, is, however, entirely distinct. The matter in dispute proceeds entirely from the wording of the prize-list, and the usual description of birds that have appeared for competition as "White Bantams," being at variance. It has, doubtless, been generally understood that the points of excellence that would here confer a prize were widely opposed to the "booting" and "tuft" that decorated the winners on this occasion, and remedy must be sought for in the more accurate enumeration of points required in certain classes, and those of which the possession would place the candidates in a different position: strictly speaking, there was nothing in the rule, subject to which these birds were exhibited, to debar their competition, but henceforth such difficulties might be avoided, by limiting a class to clean-legged, untufted specimens, or by requiring the tufted birds to be shown in a distinct class by themselves. This, no less than many like difficulties that have occurred, proves the necessity of greater accuracy in the terms of our prize lists, as also of a more generally recognized standard of merit, by which the points of competing pens have judgment passed upon them.

MINORCA FOWLS (M. F., Taunton).—1. The Minorca cannot be called a "distinct race" of fowls. Excellence in Spanish requires the white face; the Minorca's scarlet countenance causes it to be ranked as a dege-

nerate sub-variety of the first-named bird, with which they have, doubtless, had a common origin; and Spanish breeders are, moreover, but too well aware of the constant tendency, in even their best birds, to throw chickens with more or less of this objectionable feature. 2. The Minorca is commonly exhibited in the class for "*fowls of any other distinct variety*,"—a position they would improperly occupy if in any way possessed of Spanish blood; but if this class were "*for fowls of any variety not enumerated above*," this might be assigned as their best place.—W.

PERPETUAL ROSES (W. W.).—They are not very suitable against a house, unless you had some on tall standards, and others as dwarfs. The following twelve will suit you best:—1. Bouquet de Flora; 2. Le Grenadier; 3. Madame Lacharme; 4. Purpure de Tyre, or Tyrian Purple; 5. Malmaison, or Souvenir de la Malmaison; and 6. Aciciale. These Bourbons ought to be on tall standards, and the following hybrid perpetuals as dwarfs:—1. Mrs. Elliott; 2. William Jesse; 3. Madame Laffay; 4. Baron Provost; 5. Duchess of Sutherland; and 6. Earl Talbot. Or, if the Bourbons do not suit you, take the following:—1. Standard of Merango; 2. Sidonie; 3. Queen; 4. Pius the Ninth; 5. Jacques Lafitte; and 6. Auguste Mic. All these grow very strong, and will flower from May to November.

ROSE CUTTINGS (G. P. W.).—Rose cuttings when they are pruned, and elementary essays on the first lessons, to you, and such as you, are to commence next week, and will be continued for a long time at short intervals.

DISEASED GERANIUM LEAVES (Isabel).—General debility from low temperature, want of roots, and good soil, seem to be the only fault, and that you are in the right way to get over; but you certainly potted them one month too soon, because you did not keep a brisk heat for a week or two after shaking them from the poor stuff. Pray do not blame Susan. Your "clear directions" were all Greek to her, no doubt. Give very weak draughts from the hand-basin, at every other watering, all through the spring, and milk-warm, of course; and when the sun comes out strong, shade them in the middle of the day till April, and do not give them another potting till they flower.

AGE OF EGGS FOR SITTING (S. S.).—We prefer eggs not older than a fortnight. Eggs much older have produced thrifty chickens, but it is certain, as a general rule, than the older the egg the weaker its progeny.

BROKEN BEAK (H. Lawrence).—The hook broken off the upper mandible, or jaw, of the cock's beak will never be restored. The beautiful fresh redness in the combs of fowls, which you justly admire, is the result of good keeping. To tell what this occupies the space of half "The Poultry Book."

COW INSURANCE (N. M. G.).—There were two Societies in London for insuring the lives of cattle, but we fear they are both extinct.

"THE BEES. A POEM."—Where can this volume, written by Dr. Evans, be obtained?

BUFF SHANGHAI EGGS (A. Z., Jersey).—Write to G. W. Johnson, Esq., Canon-street, Winchester. They are all from prize birds, and are 20s. for thirteen, including the box.

GERMAN BARM OR YEAST (J. W. M.).—Can any of our readers tell us how this is made? The mode of preserving yeast in Germany is thus detailed. Put the yeast from new beer into a clean linen bag, place this in a vessel half full of fine wood ashes, cover it three inches deep with similar ashes, and press gently. Leave it for a day or two, until the yeast has become a thick paste. Then form it into small balls, dry them in a moderate heat, and store them in bags in a dry, airy place. When yeast is required, dissolve as many of the balls as may be sufficient in a little warm beer.

EXCHANGE OF POULTRY (W. H. Lockyer).—It must be put in as an advertisement.

HARTLEY'S PLATE GLASS (W. D.).—This might be employed for a greenhouse without over-lapping. It might be fitted together like plate glass, and all wet excluded, if the edges were done over with liquid putty before being joined together. Coloured illustrations are impossible for us.

FOWLS EATING EACH OTHER'S FEATHERS (John Chinaman).—If you supply your fowls with a little animal food daily, and powdered oyster-shells, they will, probably, leave off their cannibalism.

CONCRETE WALKS (A Constant Reader).—Full directions are given in previous volumes, as you will find in the indexes. We never saw the rockwork at the Colliseum.

GOOSEBERRY AND CURRANT-TREES (Suburban).—By all means give them a bed to themselves. If grown among vegetables, or round the main quarters, their roots are continually being injured by the spade. The soil is too rich, too deep, and, probably, too moist, for your fruit-trees. Take up the young ones, and plant on stations on the surface, as so often described by Mr. Errington.

SILVER POLAND FOWLS (A Pole).—Write to those who you see have taken prizes, and ask them if they can supply your wants.

WORMS IN DOGS (E. W.).—Mr. Youatt says, that glass finely powdered is almost an unfailing remedy. Make the powdered glass into a ball with lard and a little ginger powder.

RABBITS BARKING TREES (A Subscriber).—To prevent this paint the stems with cold coal tar as high as the vermin can reach. See, also, what Mr. Appleby says to-day.

NAMES OF PLANTS (A Subscriber).—Your Fern is *Pteris serrulata*, and requires a stove. (W. Place).—Your seeds are of *Staphylea pinnata*, or Common Bladder Nut.

RENDEL'S PRICE CURRENT (F.).—You can have one on application to Mr. Rendle, Nurseryman, Plymouth. It is very well got up.

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WEEKLY CALENDAR.

M D	D W	FEBRUARY 16—22, 1854.	WEATHER NEAR LONDON IN 1853.					Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.					
16	Th	Bruchus ater; furze.	29.820—29.784	38—25	N.	—	15	14	9 18	19	14 22	47
17	F	Erligaster lanestris.	29.746—29.531	35—25	N.W.	—	13	16	10 36	20	14 18	48
18	S	Orange Upper Wing; dead leaves.	29.530—29.494	36—16	N.	—	11	18	11 56	21	14 13	49
19	SUN	SEXAGESIMA SUNDAY.	29.710—29.550	34—19	N.E.	—	9	20	morn.	2	14 7	50
20	M	February carpet; woodside.	29.802—29.444	36—23	N.	—	7	22	1 19	2 ⁴	14 1	51
21	Tu	Sun's declinat., 10° 34' N.	30.094—30.650	38—19	N.W.	—	5	23	2 42	2 ⁵	13 54	52
22	W	Early Moth; hedges.	30.010—29.870	38—30	S.W.	08	3	25	4 3		13 47	53

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 46° and 32.6° respectively. The greatest heat, 57°, occurred on the 17th in 1847; and the lowest cold, 15°, on the 16th in 1827. During the period 108 days were fine, and on 81 rain fell.

NEW PLANTS.

BRAVOA GEMINIFLORA (*Twin-flowered Bravoa*).



THIS pretty little bulb is a native of the vicinity of the Real del Monte mines, and of the mountains near Valladolid, and Micicicacan, in Mexico. Its flowers are in pairs at the upper part of the flower-stem, and thence its specific name. They are scarlet outside and yellow within. It blossoms in July, if kept in a greenhouse where the winter temperature ranges between 45° and 55°, and the summer temperature between 60° and 80°. Mr. Beaton gives some

particulars concerning it at page 241 of our ninth volume. —(*Botanical Magazine*, t. 4741.) It belongs to the Natural Order *Amayrillids*, and to *Hexandria Monogynia* of Linnæus.

BEGONIA BISERRATA (*Doubly-saw-toothed Begonia*).

Like other *Begonias* it requires to be frequently renewed by cuttings. (*Botanical Magazine*, t. 4746.) The following we extract from the *Journal of the Horticultural Society*, ii. 313:—

“Received from G. U. Skinner, Esq., in April, 1847, and said to be from Guatemala.

“A herbaceous plant, two feet or more in height, covered all over with a short harsh pubescence. The root is fibrous, and disposed to produce suckers from its crown. The stem is cylindrical and dull purple. The leaves are palmate, doubly serrate, so oblique that there are frequently but four lobes instead of five, with the base triangular and not bordered by parenchyma. The flowers, which are pale pink, grow on stalks rather longer than the leaf-stalks, three or more in a cluster, in the upper axils or at the end of the branches. The males have two roundish, ovate, hairy, doubly serrate sepals, and a pair of very small, smooth, wedge-shaped petals, toothed only at the point.

“It is a stove herbaceous species, which grows freely in a mixture of loam, sandy peat, and leaf-mould, in equal proportions. When done growing, it should have two or three months' rest by withholding moisture from the roots. It is easily increased by cuttings, and may be flowered at any season of the year, by altering the time of starting and resting.

“A very distinct plant, but not so ornamental as many of the other kinds.”

CAMPANULA VIDALII (*Vidal's Bell-flower*).

This hardy herbaceous plant was discovered on an insulated rock between Santa Cruz and Porta Delgada, on the east coast of Flores, one of the Azore Islands, by Capt. Vidal, R.N. It grows to the height of about two feet; stem branchy; the entire plant is glossy, but clammy. The flowers are white, and partake both of the bell and urn form. It blooms in August. —(*Botanical Magazine*, t. 4748.)

PLUMIERIA JAMESONI (*Jameson's Plumieria*).

This is a handsome stove plant, sent by Professor Jameson from the neighbourhood of Guayaquil, in Peru. It is about four feet high, and blooms in our stoves in July. “Its great beauty consists in the fine red of the flower-stalks, and of the outside of the flower, and the rich yellow of the inner side of the corolla.” It belongs to the Natural Order of *Dogbanes*, and to *Pentandria Digynia* of Linnæus. —(*Botanical Magazine*, t. 4751.)

A LETTER from the neighbourhood of Leicester is now before us containing this passage—“My employer is very anxious, for the sake of immediate effect, to have nearly four hundred large evergreens, chiefly Coniferous, planted during next month, and he insists that the early spring is the best time for so doing. I wish the operation to be deferred until early autumn, and at

length he has consented to refer the inquiry to THE COTTAGE GARDENER.”

Now, we have no hesitation in replying that the gardener is right and his master wrong, if by “large evergreens,” specimens of the Fir tribe and others are intended which have attained the height of eight feet or more. Small evergreens from a nursery, which are

transplanted at such establishments almost annually for the sake of confining their roots within a small compact compass, that may be moved with little injury whenever wanted, why they may be planted by the purchaser either in autumn, winter, or spring; but such large evergreens as we have referred to should have their roots cut round *now*, and then be left where growing, prepared for removal early next October. It is quite true that large evergreens, such as we have specified, *may* succeed when transplanted in spring, but it is always at a great sacrifice, and we know an instance, last year, where every precaution in staking, mulching, and watering, were adopted relative to such trees moved the last week in February, yet one-fifth nearly of the trees were sacrificed. Large deciduous trees, ten feet high, Birch, Sycamores, Poplars, Thorns, Cratæguses, &c., bore the transplanting without a single failure.

Mr. Beaton, writing to us upon the subject, says:—"They knew as much about transplanting evergreens in the days of London and Wise as we do now; but how the change came about for planting them only in April and May, as was long the fashion, it is not so easy to say. About thirty years since, in one of the largest nurseries in the north, they would 'draw' deciduous plants until the first Tuesday in April, but none after that for love or money, as it was not 'lucky' to do so. After that day evergreens would be 'drawn' as long as orders came in; and very likely it was for the convenience of the nurserymen that the planting of evergreens was put off till late in the spring, they being the chief guides to planters, from the first edition of 'Miller's Dictionary' till Loudon brought out the 'Encyclopædia of Gardening' in 1822. Mr. Glendinning, in the 'Journal of the Horticultural Society,' made the first move towards the old style of planting evergreens early in the autumn, and in *THE COTTAGE GARDENER* I pushed the subject as far as London and Wise did—neither of us being aware that we only renewed an ancient practice."

The contribution of Mr. Glendinning, thus referred to, appeared in 1849, and from it we borrow this extract:—

"It would be traversing over a beaten track to enter into any general detail respecting the ascent and descent of the fluids in plants, and the formation and deposition annually of new wood in all ligneous vegetation. It will be sufficient for my purpose to state that this extension and formation takes place chiefly after Midsummer, and principally in evergreens during autumn, when the young shoots begin to attain a certain degree of consistency. It is during this downward tendency of the fluids, and when the solar action is in some measure on the decline, that I should seize and conduct with all rapidity the operations of transplanting; and, if this is intended to be conducted extensively, I should recommend the end of August as a good time to begin, September being the *safest* month in the year; selecting such plants to commence with as have matured their shoots. Another and very important reason remains to be stated why autumn is to be preferred for undertakings of this kind in preference to winter. The force of the sun during summer, although now on the decline, has warmed the earth to a considerable degree and depth, so that the mutilated roots are comparatively situated on a gentle bottom-heat, which rapidly promotes cicatrization, and frequently aids the emission of young spongelets during the current autumn.

"That the season which I have here ventured to urge for the performance of the work under consideration is undeniably theoretically the right period appears beyond all question; and being no mean experimentalist in rural embellishment, with plants of considerable magnitude, I can attest also that it is practically the season to be preferred beyond all others. I had occasion to superintend the removal of upwards of two thousand trees and shrubs, all evergreen, and varying in size from six to forty feet high, during one autumn. The trees were prepared as formerly described the previous spring, and as the undertaking was rather gigantic, the work was begun in August and finished with the year. The result was of course watched with some interest, and the following summer, when an examination took place, I found that those trees which were transplanted early in the season indicated little change from their removal, but the contrary was the case with those which had undergone similar transplantation during December. In fact the gradual diminution of the motion of the sap, accompanied with declining atmospheric action, which tended, in conjunction with the usual autumnal precipitations, to cool and saturate the earth, clearly and progressively exhibited our comparative success."

Knowing that the account-books of the celebrated London and Wise, of the Brompton Nursery, were in the possession of Mr. Hogg, we applied to him for some extracts from them that might confirm or refute the statement that early autumn was the season for transplanting evergreens preferred by those eminent nurserymen. He has furnished us with such extracts most obligingly accompanied by this comment:—"I now enclose you the extracts. There seems a fair distribution of all kinds of evergreens over the autumn, winter, and spring; but it is very evident that the greater portion were transplanted early in autumn. *For ten that are sold in winter and spring there are one hundred in September and October.* Of course you will understand I have not sent you every entry, but only such as will show that during every month evergreens of *all kinds* were transplanted."

FROM THE DAY BOOK OF BROMPTON PARK NURSERY,
FOR 1717.

1717.					
May 7.—	To Sir John Austin, to make good ye				
	Yew hedge:				
	36 Hedge Yews, at 3s.	.	.	5	8 0
"	To Mr. Carpenter:				
	20 Hedge Yews, 3 foot high	.	.	0	10 0
11.—	To Esqr. Waller, of Beckensfield:				
	22 Hedge Yews, 3 foot and $\frac{1}{2}$ high.	.	.	1	2 0
	3 Standard ditto, 9 foot high	.	.	0	15 0
	1 Pyramid Bredgeman Holley, 6 foot	.	.	0	5 0
27.—	To a Jobber:				
	36 Phillarees	.	.	0	18 0
June 1.—	To a Jobber:				
	40 Phillarees	.	.	1	0 0
20.—	To a Woman:				
	12 Hedge Phillarees	.	.	0	6 0
Aug. 12.—	To a Man from London:				
	3 Phillarea Hedg Plants	.	.	0	1 6
30.—	To Esqr. Fellowes, at Carshalton:				
	31 Large Standard Yews	.	.	7	15 0
31.	" 44 Hedge Yews	.	.	5	10 0
Sept. 2.	" 40 Large Yews	.	.	5	0 0
3.	" 41 Large Hedg Yews	.	.	5	2 6
4.	" 13 Large Fan Standard Yews	.	.	3	5 0
9.	" 40 Hedg Yews	.	.	5	0 0
11.	" 42 Hedg Yews	.	.	5	5 0
18.—	To Mr. Adam Holt:				
	18 Pyramid Yews	.	.	1	7 0
	260 Hedge Phillarees	.	.	8	13 4
30.—	To Mr. Bartlett, of Camberwell:				
	11 Hedg Holleys, 7 ft.	.	.	4	2 6
	12 Smaller ditto, 2 ft.	.	.	1	16 0

FROM THE CASH BOOK OF LONDON AND WISE, OF THE
BROMPTON PARK NURSERY.

	£	s.	d.
1691.			
Sept. 14.—paid for 16 firrs	00	08	06
1692.			
Aug. ye 29.—paid to a man for bringing a holly plant out of ye country	00	00	02
Sept. ye 12.—paid to Natt Swendon for 575 Phylereas plants.	03	09	00
1693.			
July ye 10.—payd for fetching of a parcel of Laurus Tinus from Mr. Ham- monds	00	05	00
ye 31.—Robt. Baker bought 7 Phillarees, ye charges sending them to Whitton, to the Ld. Ffaukland	00	09	04

WE now come to the consideration of those PEAS which may be called second early; the difference between the time at which they are ready for use, and those we have already described, being at least from eight to nine days, forming a very important consideration with the gardener. Till within the last twelve or fourteen years they were always sown for the earliest crops, and were, in consequence, called *Frames*, but as they some seventy or eighty years ago displaced the *Charlton* as the earliest, they in their turn have been displaced by those which have been treated of in the beginning of this monograph. As garden varieties, it is very probable they will, in course of time, share the same fate as the *Charlton*, after the improved early varieties have become more generally cultivated; and in all likelihood *Early Frames* will come to signify any good early white Pea, without any particular care having been taken in preserving the purity of the stock. For the present, however, such is not the case, for being a staple article in the seed trade much expense is bestowed in selecting them.

SINGLE-BLOSSOMED FRAME.

SYNONYMES.—*Single Frame*, *Russell's Early*, *Earliest Early*, *Early Dwarf Frame*, and by some *Early Kent*, but erroneously.

The distinction between a single and double blossomed Pea is not generally known. We have frequently met with those who regard them in the same sense as they would a single and double Dahlia, whereas the difference consists merely in the *Single-blossomed Pea* bearing one, and the *Double-blossomed*, having two flowers on a peduncle, or, as we generally say in our descriptions, "pods single or in pairs." There is a great disposition in all the *Single-blossomed Peas* to assume the character of *Double-blossomed*, and hence the care required in selecting them. On this account it is difficult to meet with the true *Single-blossomed Frame*, and after all it becomes a question, even when obtained, whether it is worth while to incur so much trouble and expense for any advantage that may be derived from having it of the true *Single-blossomed* character.

In the neighbourhood of Higham, in Kent, where the earliest Peas that come to the London markets are produced, I know some growers who take no small amount of pains, not only to preserve the character of

this variety, but to secure the possession of it exclusively to themselves. They save their own seed, and carefully exclude all plants which exhibit double blossoms; but it is to be borne in mind that the soil of this district is peculiarly adapted for producing early crops of every description, and there is no doubt that the Peas grown and saved on such soil, year after year, have assumed a character which they would not retain if produced under different circumstances.

The description of the *Single-blossomed Frame* being in all respects the same as that of the *Double-blossomed*, with the exception of the pods being single instead of in pairs, it will not be necessary to enter further on this subject, but merely refer our readers to that variety.

EARLY WARWICK.

SYNONYMES.—*Racehorse*, *Essex Champion*.

When the *Early Warwick* was first introduced, some years ago, it was a single-blossomed Pea, and somewhat earlier than the *Double-blossomed Frame* of those days. It was first obtained at Evesham, in Warwickshire, hence its name, and was, in fact, a pure stock of the true *Single-blossomed Frame*. The *Early Warwick*, judging from what is now cultivated under that name, has changed its original character, and assumed that of the *Double-blossomed Frame*. The *Double-blossomed Frame*, on the other hand, having been much improved of late years by a careful selection, has been obtained of an earlier character than formerly, and the result is, that by the degeneration of the one, and the improvement of the other, little difference, if any, exists between it and the *Early Warwick*. Still, however, they are, as I think, needlessly cultivated as distinct varieties.

The *Essex Champion*, which has been introduced within the last two or three years, and is admitted to be a well-selected stock of *Early Warwick*, though a good bearer, and an excellent Pea for large culture, does not differ from any other pure stock of the *Double-blossomed Frames*.

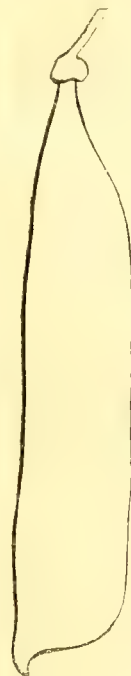
The sample of *Early Warwicks* which I grew were sown on the 5th of April, bloomed on the 11th of June, and were fully podded on the 8th of July, being eight days later than *Sangster's Number One*, and *Warner's Emperor*, and six days later than *Beck's Gem*.

DOUBLE-BLOSSOMED FRAME.

SYNONYMES.—*Early Frame*, *Early Nimble*, *Nimble Tailors*, *Taylor's Nimble*, *Nimble Peas*.

I have not thought it worth while to enumerate all the names by which this variety has been known since the time of its introduction, some seventy or eighty years ago. Such a list is of no use now, as there is no instance in the present day of any one of them being employed. Those I have recorded are still in general use; but in addition to these, there are numerous others which are adopted by seedsmen, intended to convey the idea of superiority of the stock they have for sale. This is a distinction which is perfectly legitimate, particularly in those instances where the seedsmen appends his name as a guarantee for the purity and excellency of the stock; and in proportion as confidence can be

placed in the house so distinguishing them, in the same proportion are the stocks likely to be genuine, for we cannot suppose any respectable house associating its name with an article which would tend, in the least, to injure its respectability, or shake that confidence which it is ever endeavouring to secure. It may be laid down, therefore, as a general rule, that A.'s *Double-blossomed Frame*, and B.'s *Double-blossomed Frame*, are such as the vendors know to have been produced from carefully-selected stocks; but as regards any difference between the two, in all probability there is none.



The *Double-blossomed Frame* produces a simple stem from three to four feet high, of a slender habit of growth, but considerably more vigorous than that of *Number One*, or *Emperor*. Pods single and in pairs, in about equal proportion, three inches long, and about five-eighths wide, perfectly straight, and terminating abruptly at the point; when full grown they become very thick, and almost quadrangular, and contain, on an average, about seven peas in each. The ripe seed is round, and of a pearly-white colour.

It was sown on the 5th of April, bloomed on the 11th of June, and was ready to be gathered on the 8th of July.

I have seen samples of the *Double-blossomed Frame* so carefully selected as to produce, with very few exceptions, the pods always in pairs, but the expense incurred in securing this character would not be compensated by any advantage that could be derived from the preservation of it. R. H.

(To be continued.)

VEGETABLE CROPPING.—PRESERVATION.

At length a new year calls into being the most active thoughts amongst the gardening fraternity, and every man's wits and energies will, doubtless, be sharpened by the extreme and perilous season which has just turned its back upon us. Indeed, as is well known, these vicissitudes, and sudden surprises to which the more northern nations of Europe have ever been liable, have, in truth, formed, in great part, their national character, and placed them in positions of superior strength to most of the kingdoms of warmer climes. With the gardener, a fine climate begets a sort of security which is ill adapted to meet unlooked-for contingencies, and hence we hear so much about the greater amount of success in the culture of hardy fruits, &c., in situations where the inference beforehand would have been fairly against such results. Your northern gardener is a jealous creature; he has little faith in weather, and is not in the habit of poetising over zephyrs, gentle showers, the beautiful hoar frost on the window-panes, &c.,—he is a stern sort of fellow, and can scarcely afford to crack a joke.

It may here be urged, what has this to do with the heading of this paper? The answer is—Much; for it will be found that gardeners, whose lot is cast in inauspicious climes, or who have soil of a peculiarly sterile or obstinate character to deal with, are compelled to expend extra care amongst the vegetables, even as with the fruits.

I may here point to the great importance of attending to those principles as to the early winter frosts, on which the safety of tender vegetables depend; and in so doing, I will just quote my own practice, as that is close to my elbow, and has been what I should call eminently successful. With a thermometer little wide of zero, and an unusual demand for the products of the kitchen-garden, it may be surely fancied by even those who have never been subjected to such an ordeal, that the gardener's mind must be liable to much anxiety.

Well, as I before said, we northerns never trust weather; for my part, during the last half-score years of my time, I have always so laid my plans in the beginning of December as though I expected a Lapland winter; that is to say, as far as labour would carry it. This may seem pushing things to extremes by many, and, indeed, it is; but I find it a most wholesome jealousy, and one that is satisfactory in its results.

Sometimes, to be sure, a wiseacre may stare at you and say, "You made too much fuss by half, for I did not take half your trouble." But these trusting men are in a mess when the day of battle arrives, and then, forsooth, most of them will turn round and prate about the propriety of a "stitch-in-time."

But, to state details, let us take the *Brocoli Family*. Every plant we have, and I have a great breadth, have had their crowns tucked full of straw ever since the middle of December, and they now look almost as fresh as though we had passed a mild winter; the straw still remaining on them (January 24). *Bath Coss* and *Hammersmith Lettuces* were all covered up when firmly frozen in the Christmas week; they remained in this state until almost the 19th of January; that is to say, they remained covered three days after the thaw arrived; and they are in fine order, with scarcely any perceptible injury. The weather was dull when they were uncovered; and had the sun broken out, I could have restored half the covering as shade; indeed, it is always the best practice not to thoroughly uncover after long covering; we always do it in what might be thought a slovenly way, and leave a flickering screen on still, perhaps, for two or three weeks. *Coleworts*, of which, in one point or other, we have had, I should say, a quarter of an acre, were all covered thinly just as the lettuces, and, indeed, treated the same. We have had small loss, considering the style of weather we have endured. Our *Coleworts* now lie, as the Lettuces, three-parts uncovered; a flickering of loose, strawy litter lies over them like network.

*Savoy*s, too, are a somewhat tender green; at least, they are not safe in such frosts as we lately experienced, especially if they are ripe in head in the autumn. My practice is to cut all the more forward with solid heads, and to stick them, with their stalks pointed close together, on the north side of a wall, or any colder spot still, if possible. Here they lie close together, and when firmly frozen, I cover them well up with litter, finishing the top in a thatching sort of style, to throw off the wet; and, if snow fall, it is not suffered to thaw on them. In fact, we treat the mass as though it were a miniature ice house, and here they keep fresh as a daisy for many weeks. *Savoy Coleworts* are more dainty. We grow a good many of the new, little, neat, green-curved for this purpose, and we have now a beautiful stock of them, as smurt, as neat, and green as little bushes of green-curved dwarf Endive in September. These being in a green state, and devoid of hearts of any bulk, require a

difference in the mode of protection; in fact, they are managed as ordinary Coleworts.

Now, after such report, into which I have been almost imperatively led by the bearing such remarks may have on the vegetable question in winters to come, let me advert to a few features in vegetable culture peculiar to the season, for I must soon back to the Fruits again.

And, first of all, about a *rotation scheme* adapted to the succeeding spring, summer, autumn, and winter. This, in a garden of any consequence, is something more than a mere whim or fancy. It unfortunately happens, that science has done but little for us as yet in this respect; the best light by which we are guided at present being that of sound experience, which, however empirical, when taken without reference to principles, is of much value. It must be borne in mind, too, that the man of experience, or practice, is not the same dogmatical animal that would have been his character half a century ago. The public will not receive this kind of pompous ignorance, although backed by grey hairs and a stiff demeanour. The deductions, or inferences, therefore, of men of experience and good standing, in any profession, in these times, carry, necessarily, much weight, and this is just as it should be.

In advertising to rotation schemes, I have before offered my views, and I may be allowed to repeat some of them, as bearing on cultivation matters in hard-worked vegetable gardens, for such, I doubt, constitute the majority. The first great feature that has ever met my view, in a consideration of the rotation question, is the frequent recurrence, and the immense breadth of land required, for what are termed Cabbageworts, a term, the modern acceptance of which includes everything, from a Ragged Jack up to a first-rate cockney Cauliflower.

It does appear to me, that in spite of all that chemistry might do for the rotation question, here would at all times be a point of such over-bearing influence as to throw many impediments in the way of the most scientific procedures. I would here, once more, draw attention to deep digging or trenching, that is to say, if you can get labour enough, for not every one who can preach such doctrines can carry them out, and if, any one should honour me with a call, and not see so much of this deep digging going on as he would be led to expect, I shall be tempted to use the language which I have, years ago, heard imputed to some irreverend lecturer, who, when accused of the difference between the precepts he gave out and his own example, replied—"You must follow the light, not the lanthorn."

When I urge trenching, however, I am not supposing it either expedient or possible for every one who possesses an old kitchen-garden to deep dig every pole of land annually. I name it for the sake of directing attention to a class of vegetables, &c., for which I have been in the habit of using the term "PREPARERS." Of such are the following:—Asparagus, Celery, Rhubarb, Leeks, Winter Spinach, Sea-kale, Horseradish, Raspberries, Strawberries, &c.

Now, these are not all preparers in the same sense precisely, some accomplish this by merely deepening the soil, others by the long period during which the plot is occupied by them, and most by the extra manuring, &c., requisite when the crop is "laid down."

I do think that all modern rotation schemers will do well to look this view of the question full in the face, and if their Sea-kale has, hitherto, been produced under blanching-pots, their Celery grown simply by the old and pitiful single row system, their Asparagus left *merely existing*, for several years, their Raspberries in a similar position, to reconsider the matter, and see whether a different mode of culture leading to better rotations may not more conduce to the end in view. I

have so often adverted to this part of the question, and in these pages, too, that some may, doubtless, grow tired of it; but I may just remind such, that the backwardness of vegetable culture and hardy fruits has been urged in the most pointed way, during the last year or two, by parties of such weight, as that their remarks may, by no means, be slighted. R. ERRINGTON.

CUTTINGS.

ACCORDING to a good authority, who has been resting awhile, at Bath, from the toils and scenes of a busy country life, "this is a season when such operations (making cuttings) interest all connected with in-door and out-door gardening." Now, it is quite true that spring is the best time to make cuttings for in-door propagation, and no one can begin too early in the spring with soft-wooded cuttings if the means are at hand; but the spring is, certainly, not the best time to make cuttings for outside propagation; nevertheless, we are all of us but too glad to receive such hints as will enable us to make *THE COTTAGE GARDENER* more useful, and "augment the sale of it;" therefore this is the first of "a series of articles on *Striking Cuttings*, first, of all soft-wooded plants, as Geraniums; and, secondly, all hard-wooded plants, as Roses, &c.;" on the recommendation of J. S. M. while residing at Bath.

In my busy days, I received more useful hints on gardening from Bath, than from all England, Ireland, and Scotland put together. When people go to Brighton they seem to forget gardening altogether; but when they go to Bath, it often seemed to me that it was on purpose to tell of all the very secrets of gardening to one another; and by way of proving how far any one was up to the mark, to get things sent from home to Bath to tell the tale. Poultry shows are nothing to the private exhibitions at Bath, at the end of the winter, to my own knowledge; the worst of it was, and perhaps is now, that the exhibition is not always a private one; your last cucumber to Bath may have been presented to a second party, and to gratify the presentee, it is now ticketed for all Bath to see, as from your garden in the happy land, if not from the cradle of the very science, bearing on its length and juiciness. At all events, Editors must know every thing, else they would never send me this letter from Bath, to remind me of reminiscences of "Auld Lang Syne."

The top part of a shoot is the best part for a cutting in all plants, and more so in all the soft-wooded plants; the top of a young weak side-shoot is better for a cutting than the top of the strongest shoot, for this reason, that it is not so liable to damp at the bottom as a large succulent shoot would be; but if you can get it to strike roots, the strongest makes the best plant of the two. Then, on the principle of never venture, never win, most gardeners make cuttings in the spring of as many tops as they can put their hands on; but writers do not advise young beginners to be so bold—rather to feel their way by taking the more sure and easy tops for their first cuttings. But I shall mention a great many plants by name, and say under each of them how the thing is to be done, and in different ways.

Long cuttings are not so easy to manage as short ones, and they are more extravagant; the reason is this, the long ones will not hold up their heads nearly so well as short ones, and when the head of a cutting droops it is a bad sign, and if it is not able to prick up its ears and stand erect after two days, it is a worse sign, and, instead of "being all up with it," the chances are that it will not root at all, but damp off at last. I shall tell of a remedy for such a case by-and-by. Secondly, the extravagance of making long cuttings will never be more felt than when you have only one

plant of a *Verbena*, or *Anagallis*, or of any other kind of which you expect a good many plants at turning-out time; or if that one plant has only a single shoot, and you take the first cutting of it too long, what remains will be too short for your purpose to get more cuttings from during the cutting season.

All cuttings, except those with heels, ought to be made exactly in the same way, so that if you understand how to make a *Verbena* cutting, and also why it is that you made it just that way and not any other way, you understand how and why every other cutting in the country is made. Now, on the supposition that you never made or saw a cutting made in your life time, and considering the hard winter which made stock plants for getting cuttings from scarce, let me advise you not to try experiments on your own stock until you have learned to make a cutting as smart as any of them from the following directions:—You can learn the process by practising on any thing you can gather from the hedges, road-side, or any where—a handful of the tops of Privets, Lilacs, particularly Persian Lilacs, which are quite small at the tops—Apple, Pear, Peach, Plum, Cherry, or what not, will learn you equally as well, if you gather a lot of the tops, and try them as I shall point out. The dullest boy I ever had from the farm, or from the school, I could teach in ten minutes to make cuttings of most things, and surely it will not be any difficulty to one like you to learn all about them at once; still, a little practice on the wild things will not be amiss, seeing that *first-cuttings* will be very scarce this spring.

I never like to see a cutting of any soft plant more than two inches long, except *Geranium* cuttings, and a few others; *Verbenas*, *Petunias*, *Calceolarias*, *Lobelias*, *American Groundsel*, *Anagallis*, and *Fuchsias*, I like to be only of that length for hotbed and spring work—anything shorter will do equally well, even half-inch cuttings, when one can manage them, will be better in the long run than any thing beyond two inches. I put a great deal of stress on the particular length I wish for cuttings; and I am too old now, and have been so accustomed to cuttings of all sizes, that if all the gardeners and writers in the country were to rise up against me, and say I was daft on that point, I would not give it up for the whole lot of them. The *Verbenas* grow with two leaves at every joint, one on each side of the shoot, and *Petunias* seldom grow that way, but on the *flowering wood*; this is another point on which I am just as firm as on the length of cuttings.

In the spring, we often meet with store pots of *Petunias* that were struck last autumn, and on every plant in the pot the leaves are zig-zag instead of being in pairs—at least, the top part is not in pairs of leaves, not one of which is worth a pin, they are even worse than useless, they will deceive you next May, as sure as fate, if you strike them now; the tops are “flowering-wood,” and you cannot alter their nature. One should never make a cutting from the flowering-wood of a *Petunia* in the spring; we are often obliged to make them of flowering-wood in the autumn, because most parts are then in bloom. When one makes his *Petunia* plants from the flowering-wood in the spring, the bottom part will not swell out like the new top, which it will make; the plant gets top-heavy, and unless it is fastened down at planting-out time it snaps off, or it is so twisted about with the wind that it cannot grow; and when it is fastened down, the hard, wiry bottom cannot pass up sufficient nourishment for the healthy new top, and there it remains ever so long, and you cannot tell whether it will live or die—all this time the bed might be covered. I have known very good gardeners deceived by these *Petunias*, without being at all aware of what was the matter with them; and I appeal to any of my readers who have been in the habit of planting out *Petunias*, if they have not, some time or other, met with more dis-

appointment with them than with any other plants, if ever they stood still after planting. I have been so myself, and found some of such plants to go off for two months after planting time without knowing why, and I was a long time before I found out the reason, but after finding out the cause of their going off, I made a practice of cutting back all my store pots of them in January, so that the propagators could not err in making cuttings from the wrong parts; after that, I seldom failed in having the *Petunia*-beds as full and as early ready as any beds in the garden. Therefore, before we set about learning to make cuttings, just look over your store pots of *Petunias*, and if the leaves are alternate on the top of the shoots, cut them all down to the old leaves which were on the cuttings last autumn, and put the pots into heat, they will then make new wood for the very best kind of cuttings, and be quite time enough. Although there is not another plant that does so bad from flower-wood as the *Petunia*, there are many that will be backward in starting next May, when planted out, if the cuttings are made now from the old wood or pots that stood stock still all the season; to get over this, many gardeners put the store pots into heat in January, so as to force a little growth to get the first cuttings from.

Altogether, I think the best way will be to say that the first crop of cuttings from all your soft-wooded plants ought to be from growth made since the end of last November. Those who do not want immense numbers seldom begin before the end of February, when there is no lack of this young growth, but for those who must begin with the new year, there is nothing for it but to force on purpose.

The best crop of *Verbenas* I ever had, was once when the fly took to all my stock of them, in a cold house, at the end of November, and as nothing else in that house was flyed, I ordered the whole lot of *Verbena* store pots to be removed to a house where we were forcing *Roses*, and all kinds of plants for the conservatory, and where a moist heat of between fifty and sixty degrees was kept, with good airing. I forget, now, if it was from the weather getting very cold, or what, but the *Verbenas* stood in the forcing-house, up on a shelf close to the glass, till Christmas, and every one of them made a growth in the time fit to make cuttings; the cuttings were made, and two more crops of healthy, strong growth were got before the old pots were removed. All our *Verbena* plants for that season were rooted before the end of February, and all the old store pots were thrown away. Once more; if store cuttings of *Verbenas*, or of almost any soft-wooded plant, are badly injured by the fly, and look black or smutty, no cutting should ever be taken from such parts, the tops must either be cut off or forced to new growth before cuttings are fit to be made from them.

The way to make a cutting is this—you first of all cut off the top of a shoot, say of a *Verbena* shoot, as being one of the easiest, measure with your eye down to the pair of leaves that will come the nearest to two inches, and cut it just above the next joint lower down, the bare piece from between the two joints will serve you to hold between the forefinger and thumb of the left hand, while you cut off the two opposite leaves with a very sharp knife; cut the leaves, or rather the leaf-stalks, quite close to the stem of the cutting, but do not injure the buds which nestle there; now take the top of the cutting between the forefinger and the middle finger, and put the joint from which you have just cut the leaves on the thumb-nail, and cut right across, just below the joint, with a clean cut, and the cutting is made; if the knife is blunt, or if you put much stress on it, you will make a bruised cut, or if you cut with a pair of common scissors it will be the same, and a bruised cut on so soft a part is sure to rot and fester as

soon as it is planted, and water or moisture gets to it, but a clean cut will stand safe long enough for the cutting to make roots, as the stem of a flower would in a glass of water.

Many kinds of cuttings would suck up more water than was needed if they were cut off half-way between two joints, and would run the risk of being killed by too much water so taken up, and that is the reason why they cut so close to a joint or a single leaf, because the stem is harder there than between joints or leaves, and will not take in so much water in consequence. For a *Verbena*, however, it is not at all necessary to cut close to a joint, for the joints of them are of the nature of Strawberry-runners, the one will root as well as the other at the joints, if they touch the ground; sooner, perhaps, than if the joints were buried deep in it.

If I had to plant a new bed with *Strawberries* tomorrow, I would take up the young plants, and leave six inches of the runner to every one of them, and I would then plant them like Cabbage plants, with a dibber, putting down the six-inch piece in the hole till the roots came just within it; with another push from the side with the dibber, I would make the six-inch piece as firm in the ground that you could not pull it up without breaking the leaves, and yet the roots would be as loose as anything, and free to work in the bed in all directions, without any cramming and cramping, and a stranger could not see how the frost did not turn out my whole plantation, after the first hard night; yet they are all as firm as London. Now, *Verbena* cuttings, also *Lobelias*, and some *Calceolarias*, could be done exactly on the same plan, getting as much of the space between the joints, to fix in the cutting-pot, as would do to hold it firm, with the bottom joint only within the surface of the sand. By this way we always did our cuttings of very scarce sorts of *Verbenas*, or new ones bought in late in the spring, and gained one joint for every cutting we made, and that joint made two more cuttings by the next growth, which was a great help to get a good stock from a small beginning. The usual way is to take three joints for a free-growing *Verbena* cutting, or a four-joint cutting, when the joints grow close together, then, by taking only two joints and the naked piece below, to fasten as a cutting, we saved the third joint for another growth. When you come to try this way, if you look sharp you may kill two birds with one stone; make a clean, smooth cut every time, and your cutting needs no more dressing, except cutting off the two leaves next the bottom, or if you have room in the cutting-pot, you need not even cut these leaves at all.

I would not advise at all to have the soil in the cutting-pot for soft cuttings pressed hard, as some people do, and as we must all do for Heath cuttings and the like of them, for I am quite sure that this hard pressing does more harm than good. To have a free nourishing compost is much better, and easier for the tiny roots to work in. I care not what kind of soil suits a soft-wooded plant best when it is out of the propagating stage, I use only one compost for the cuttings of all of them, and I never press it hard, not more than if I was potting a *Geranium*, just two or three raps by the bottom of the pot on the board, then a thin layer of clean sand on the top to keep the cuttings clean and tidy; an eighth-of-an-inch, or even less, will do just as well as an inch deep for any soft cutting, as the sand is not for the purpose of helping the cutting to root, but to keep all clean; many thousands of such cuttings never get a morsel of sand at all, but then the pot cannot be made so full as with the sand; more water will be needed, and some of the cuttings often die or damp off on the top; but with sand covering, and a good working bottom-heat, 70° to 80° strong, and no bad smells from the bed, I would not give a fig for a

man who would lose one cutting out of five hundred in March and April.

The universal compost for soft cuttings is equal parts of peat, leaf-mould, and sand, sifted as fine as possible, with an inch of the last siftings over a good drainage; if leaf-mould is not at hand, I would rather use peat and sand in equal proportions than put any kind of loam with cuttings for fast work. I have often and often missed the leaf-mould when I had it in abundance under my nose, and I know that in the great nurseries they think it a most extravagant thing to use it at all for such common work.

A three or four-inch pot is a better pot for soft cuttings than any other size, because, without good practice, one is too apt to give too much water, and if the pot is larger, the compost will hold too much water for the safety of the cuttings; but with a small pot, well drained, and with such light compost as I used, one might water twice a day without doing the least harm. Scores of times have I watered many scores of cutting-pots three times a day, when the sun was strong in March, but very little to each pot, as it was done with the syringe, but then the machinery was perfect, and a man watching every turn and shade of the movements: bottom-heat up to 90°, top-heat seldom so low as that, and nothing to shade the sun from the glass frame, no bell-glasses in use, but no air allowed as far as it could be kept close. Five days allowed to strike *Verbenas*, *Anagallis*, *Senecios*, and a few others; and ten days for the slower ones; the heat, the sun, and the syringe were the prime agents, and if the syringe was neglected for one hour after the frame was dry enough for another turn it would make a day's difference in the rooting of the cuttings, and perhaps destroy some of them altogether; it was just like risking oneself in an express train—the greater the danger and the speed, the more exciting, and the sooner ended; but the turn of a straw, and we shudder at a distance from the scene.

When one has to raise seeds, or seedlings, and force some *Hyacinths*, or grow young *Cucumber* or *Melon* plants, or any other thing requiring a different treatment from cuttings in a two-light box or pit, if a temporary division cannot be made down below the rafter to separate the different things, it is more safe to have cuttings with some close glasses over them, bell-glasses, or squares of glass. I like squares best as giving less trouble, but things will root under a bell sooner; on the other hand, squares require double pots, and they need the inside pot, or cutting-pot to be small; and I hold it as firm as a rock, that a cutting-pot was never too small yet; then the square never wants wiping like a bell glass, only to turn it every morning, and the bottom heat is never too strong for the double pot, as there is always a little space between the two to let go the heat. Another use of the square is that it compels the hard-headed ones, the dulls and the drones, to make their cuttings short enough so as to find head-room without being obliged to put the cutting-pot inside very large ones on purpose for head-room. Add to all this, that if you must have top glasses, you must either take a square of glass and double pots, or else lose the best part of the cutting-pots by the bell-glass, the sides of the pot all round being the very best part for all cuttings, and that cannot be had if the bell is on, unless you double pot and put sand between the two for the glass to rest on; but really, for such propagation as we are now contemplating, this is too much of a good thing, just like carrying coals to Newcastle. It was necessary, however, that I should show these different ways before we decided on how the cuttings were to be planted. When the frame or bed is close, and is entirely given up to cuttings, no glasses are needed unless one likes, then the pots may be brimful, and the cuttings planted as shallow as will just hold them steady, and no more,

the pots being so small one need not mind filling the centre with cuttings, but only a row round the side, and as near to each other as they will stand without touching each other.

Here, then, is a great advantage for breaking in the youngsters; a pot brimful must be very carefully watered, else all is over; but the sand takes in enough by little and little, and they can never overdo the watering; the small pot never gets too much bottom-heat, and the roots all at the sides of the pot will run down faster than by any other way, and when the plants are ready for potting off there is no fear of breaking roots. When we have to place a cutting-pot inside one that is a little larger, the smaller the outside one is the better, if it gives head-room to the cuttings under the square of glass; and it often happens that pots do not match so near as to allow of this without having the cuttings lower in this cutting-pot than those in the last pot, but half-an-inch below the rim is the lowest I can afford for young apprentices to put in their first cuttings. I once had a man that I could never shame out of pressing the soil for these cuttings as he would for hard-wooded ones, and although he lost scores by his bad practice, he persisted, in spite of me, till one day, being out of all patience, I made him do what I never heard of before, but it answered very well indeed; it was to fill a pot with the compost, and put on a layer of the driest sand he could find, and not to press or water till after the cuttings were all planted; what with the trembling from his fright, and the trickling down of the dry sand in each hole before he could get in the cutting, it was an awkward job, but every one of the cuttings took, and from the two extremes he made a useful man after that, and he hit on a good new plan for cutting-pots and seedling-pots after that, which I followed and found useful. It was to have a little hollow in the centre for holding all water each pot needed, and from this hollow the soil all round took up enough, without any falling heavily on the cuttings.

D. BEATON.

STRIKING, AND YET COMPARATIVELY NEGLECTED, PLANTS.

AGAVE AMERICANA (American Aloe).—This, according to a popular delusion, is the wonderful centenerarian, that will bloom only when a hundred years old. Many a mile has been tramped by young gardeners to see a good specimen in bloom. I have already done so, and would be tempted to repeat the pilgrimage to-morrow. A flower-stem, from twenty to thirty feet in height, and with something above fifteen thousand blooms and buds, is a sight not easily forgotten. I once paid a shilling to see a "magnificent specimen" at the Egyptian Hall, Piccadilly, but it was such a Lilliputian, that I have seen a *Yucca filamentosa* very little behind it.

This genus, along with *Clivia*, *Litsea*, and the wonderful *Fuorocroya*, &c., form a fibrous-rooted division of the group of Amaryllids. The species with which I have headed this article, and its variegated variety, as well as many other species, are met with pretty plentifully in the tropical parts of America. *Americana* is not only one of the most luxuriant, but the most yielding to circumstances, as it is found equally at home in the hot plains, and at an elevation of nine thousand feet. Hence, the plant is nearly as comfortable in the South of Europe as in the central states of America. Nay, in Devonshire, it has been found to grow and bloom in the open air without any protection. A plant at Saltcombe Bay, six inches high, in 1804, was eleven feet in height in 1820, and that year threw up a flower-stem twenty-seven feet in height.

Still, unless in very favourable positions, the plant

will not endure the open air in this country; and far less could it be cultivated, with advantage, for the uses to which it is applied in more genial latitudes; such as forming impenetrable fences or hedges; yielding strong fibre, thread, and paper, from its macerated foliage; affording soap, by evaporating the expressed juice of the thick leaves; and giving abundance of a beer-like liquor, called *pulque*, by fermenting the juice that flows freely where the inner leaves are cut out just before the flower stems appear. A strong spirit is also distilled from this pulque.

I know nothing of the amount of fibrous matter derived from this source, or whether or not it could be greatly augmented. Doubtless, there are many things, such as the foliage of the Pine-apple, from which a great amount of useful fibre could be obtained. The needle-like foliage of the Fir tribe is already being brought into useful requisition. I allude to this incidentally, having lately read that so much is a deficiency of fibre of any sort felt, that even the paper-makers are quite at their wits' ends to obtain anything that will suit their purpose, the demand, owing to the vast quantity required for the cheap literature of the day, actually treading upon, if not exceeding, the supply; so much so, that ladies are besought not to waste a rag that by possibility could be converted into paper. Only think of a young lady, for the sin of waste or carelessness in this respect, being condemned to tell such ecstatic thoughts to the cold moon, instead of wafting them, on smooth hotpressed, to an atmosphere genial and reciprocal!

I would merely, then, in general, recommend the culture of this Aloe for its somewhat grotesque interest and beauty. The variegated-leaved one is the most pretty, but it does not grow so strong and luxuriant. The plants will never make an impression until they become somewhat gigantic in size; then, as sentinels to the entrance of a conservatory in summer, placed in pairs by a terrace-walk, so as not to interfere with the style of architecture, in fact, in almost every possible position, they have a noble effect, and will not be very particular as to the care they require. I confess, that if I had such specimens in large tubs, I should not wish to lose them by their flowering. Did the blooming of these plants become a matter of importance, gardeners would soon find the means of doing so, by rapid growth, and then early maturation. If a plant could be bloomed in the open air in Devonshire, the inference is obvious that it could be bloomed much earlier when all the advantages of house-treatment were bestowed.

What has been stated of the localities in which the plant is found furnishes the key-note to its treatment. It is generally propagated by suckers. These, when taken off, and firmly potted in sandy loam, and a little lime-rubbish, will grow quickest if placed in bottom-heat, and furnished with as high a temperature as would suit a Pine-apple. They will grow, but more slowly, in a greenhouse. In fact, before the plants become large they will get on best in the hothouse, though that need not discourage those having only a greenhouse. In either case, when the plants come, after repeated shiftings, to fill a 12 or 16-inch pot, they will be best out-of-doors for a couple of the hottest months. By the time a tub or a box is necessary for them, some nice fibry loam should be obtained, enriched with dried nodules of cow-dung, and a fair portion of lime rubbish, and some bits of charcoal, to keep the whole in rather an open state. It will be desirable to shift them not later than the end of May, that the roots may ramify freely during the summer. It will also be necessary to keep the collar of the plant well up; as if there is much soil below the bottom of the ball it will be sure to sink. After this, the Agaves, however desirable they be out-of-doors, will be looked upon as downright intruders did they want the inside of stove or greenhouse. A

different system of management must, therefore, be adopted; but out-of-doors it will be desirable they should be, from the middle of May, or earlier, until the middle of October, if the autumn is fine. Where room in a greenhouse or orangery, &c., cannot be given, a warm shed, stable, &c., should be secured, and a small truck with wheels would assist the moving of the plants. The successful wintering, in the above supposed circumstances, will greatly depend on the soil being rather dry before housing. To secure this, means should be resorted to for throwing the autumn rains past the soil. No frost above a few degrees, better none at all, should touch the plant. In severe weather they may be covered up, top and tub, with dry hay, freed from its seeds. In a mild winter, or during mild days, if the place in which they are wintered be dark, they will relish being wheeled to the door during the heat of the day. No water will be wanted at the roots until placed in the light next spring. The leaves, if at all dirty, may have a sponge drawn along them, as the cleaner they are the better will they look and thrive. As the sun gains strength in June, the plants will want water rather liberally, and manure-water may then be given alternately with advantage, or if that is not convenient, a mulching of rich compost may be substituted. By September, little or no more water will be required, and even rains should be kept from the soil as much as possible. This will render the large leaves firm and compact, and in this state they will stand much rougher treatment during the winter.

LITTEA GEMMINIFLORA (*Syn. AGAVE GEMMINIFLORA*).—This is a very singular plant from Peru, which, although requiring a greenhouse when young, and delighting in a higher temperature in its infantile state, will, when old and seasoned, prove, it is expected, as hardy as the Agave. Imagine a short, knobby stem, with numberless long, rush-like foliage proceeding from it; all of these, with the exception of the younger central ones, which are upright, have a pendulous, weeping character, so as to hang gracefully over the pot or tub, and you will form a good idea of the interesting appearance of the plant, even though you should seldom see its splendid flower-stem issuing from the centre of the foliage, and rising, like a huge tapering-to-a-point bottle-brush, to a height of from twelve to thirty feet, the greenish-yellow flowers, with the stamens and pistil standing freely out beyond the petals, averaging three inches in length, and produced in succession along the sides of the stem.

The plant was named in compliment to a Milanese nobleman. It was introduced more than fifty years ago; and, so far as I am aware, bloomed first in this country at Mr. Knight's exotic nursery in 1826, the flower-stem appearing in the middle of August, and reaching fourteen feet in height by the middle of November. I think it is very likely that plants may be found in the same establishment. It had bloomed previously in the continent, and plants had been raised from its seeds. A specimen bloomed at Brussels, in 1837, the flower-stem reaching the height of thirty feet, and having from 1000 to 1500 flowers. Two years ago, a small, healthy specimen bloomed in the Botanic Garden, at Chelsea, the flower-stem, in November, reaching the height of eleven feet. It had been kept in a greenhouse for several years, receiving the usual treatment given to Aloes and plants of that character. In all the instances of its blooming, with which I am acquainted, the flower-stems have made their appearance in autumn, and reached their culminating point before mid-winter. It would seem, therefore, that the heat and the light of a summer's sun were necessary to the maturation of the plant. If, then, it was desirable to bloom this plant at an early period, a leaf must be taken out of the modern successful Pine-grower's book, and thus accomplish rapid growth

and early maturity. I can recollect huge Pine plants standing in pits, and producing fair fruit when they had received some half-a-dozen-of-years' attention. But I have seen as fine fruit on little squat plants,—such, for instance, as at Trentham,—the plants being scarcely eighteen months from the sucker. Although this plant would not need the same amount of heat as the Pine; still, a higher temperature than the greenhouse, with abundance of light and air, would hasten its period of maturity, and this latter would be still farther done by abundance of light, and reducing the water to a minimum in summer before the plant was wanted to show in the autumn. When the plant is more generally diffused, and even flower-stems from six to ten feet in height duly appreciated, there will be means taken to make it bloom early. The simplest culture will suit it. It can be raised from ripe seeds, but is generally propagated by suckers. It delights in sandy-loam a little enriched. In winter it will require little water, and in summer weak manure-waterings will be acceptable. The temperature of the greenhouse will be quite sufficient, unless when it is desirable to rattle it on when young.

FUERCROYA GIGANTEA.—Another commemorative plant, and resembling an Agave in appearance. It has been introduced 160 years, but has seldom been seen in flower. It bloomed at Walcot, in Shropshire, in 1821. It requires similar treatment to an Agave.

FUERCROYA LONGEVA is, like *Gigantea*, from South America, and a still more wonderful species. Its specific name may have reference to the slow rate at which it grows, as the natives have a belief that it flowers once in 400 years. It was found on Mount Tanga, in the province of Oaxaca, in Mexico, at the elevation of 10,000 feet; and, therefore, deemed hardy enough to stand our climate, at least, in the southern counties. Several plants were introduced in 1833; so that we may wait long until we see one of its wonderful flower-stems at home, if the tale of the natives be true. Without that splendid appendage, if found hardy, it would constitute a fine addition to rugged and rocky scenery. Its clean, upright stem would resemble an oldish plant of *Yucca aloefolia*, but the large cluster of long sedge-like leaves on the top, differing from the upright foliage of the *Yucca*, has a drooping, pendulous position. From the centre of this mass of foliage the wonderful flower-stem rises. Baron Harwinske found specimens, with clean cylindrical stems, twelve to eighteen inches in diameter, and forty feet in height, and then a flower-stem reaching another forty feet. The appearance of a graceful, finely-formed Spruce Fir of that height, forty feet, raised upon the top of a clean pole some forty feet high, with a huge coronet of drooping sedge foliage at the point of junction; only supposing that that tree was a mass, not of green leaves, but of white blossoms, would give no bad idea of this wonderful flower-stem. It would be interesting to know what progress the plants in this country have made.

YUCCA.—The whole of this genus is of easy cultivation, rejoicing in deep sandy loam, and all are hardy enough for England, with the exception, perhaps, of *aloeifolia*, which, especially when the stems get to a great height, might have a little protection in winter. The genus is as striking among Lilyworts as those already referred to are among Amaryllids. I saw *Yucca gloriosa* in bloom, in several places last season. The beautiful, low-growing *filamentosa*, that throws up a flower-stem of from five to seven feet, is always a welcome sight in any position. Taken as a whole, however, the plants of the genus, all of them interesting, make little show when grouped together; and neither do they harmonise with fine architectural or symmetrical lines. Sparingly introduced, they make a striking appearance from contrast. For instance, a huge bush of *Gloriosa* is rather a taking object on a well-kept

lawn. Wild scenery, and huge rock-works, are the scenes in which they would revel and feel most at home. When walking through such places in princely establishments, I have often thought what fine accessories the *Adam's Needles* would give. No place is so small but a few of these plants would lend it an additional charm. They are easily propagated by suckers and offsets. I think Mr. Beaton has already referred to this singular tribe, and a proper defence and recommendation of their peculiar fitness for certain circumstances could not be left in better hands.

R. FISH.

THE CYCLAMEN.

(Continued from page 362.)

THE flowers of these plants are, as I have said before, exceedingly beautiful, but I must also claim for the foliage of many of the species the same praise. The markings of the leaves are almost as beautiful as those of the leaves of some of the *Anætochils*, which my esteemed friend, Mr. Beaton, has written about lately. Almost every seedling plant of *C. Europeanum* and *C. hederifolium* have different shades of white and green on their leaves, so that in raising seedlings the interest of the cultivator is greatly heightened thereby.

In describing the potting operation, I omitted to mention that *C. coum* should have the bulbs covered about a quarter-of-an-inch. The reason for this difference I can scarcely say, but it is practised by all growers, myself included. It may be, that if the bulbs were left exposed the leaves of this species would fall down and be very irregular, instead of forming a neat, handsome plant. It is difficult, in some few cases, to give a satisfactory reason for some particular point of culture, and this is one. Experience says—cover the bulbs with the compost a quarter-of-an-inch, and I know of no reason to depart from the rule.

Summer Culture.—This season I will suppose to commence as soon as the leaves begin to push forth, which generally happens, if they are cultivated in a cold frame, about the end of January. They will then require a gentle watering; and as the leaves advance the quantity should be gradually increased. The month following the flower buds will begin to appear; then, if the possessor has a greenhouse, they should be removed into it, and placed near to the glass, to keep them from being drawn. In this position more water will be required; but the soil should not be kept constantly wet, but allowed to become dry on the surface between each successive watering. Plenty of air will be beneficial on all favourable occasions; and when the plants are fully in bloom they may be placed in such situations of the house as will show the beauty of the flowers to the greatest advantage. I have them placed upon empty pots turned upside down, which elevates them above the other plants upon the platform, or stage, where they stand.

After the bloom is over, and the late frosts all gone, I set them out-of-doors upon a bed of coal-ashes, in front of an east wall, where they can enjoy the morning sun. Water should still be given to them in dry weather, the grand object being to preserve the leaf and root-action for two or three months. This gradually increases the size of the bulbs, and stores up a large amount of vigour for the following year. By the end of June, the leaves will begin to show symptoms of ripeness and decay, then withhold water, and to ensure perfect rest, lay the pots on their sides, so that no summer rains may cause precocious growth.

During all this treatment in the open air keep a constant look-out for slugs and snails. These pests are very much pleased to feed upon the young buds, which,

if eaten off quite clean, destroys them effectually. I believe they are more destructive to these charming plants than any other, therefore be diligent in hunting them out of their hiding-places. They may generally be found lodging under the pots, and sometimes form a neat, snug homestead, or den, in the hole at the bottom of the pots, from whence, if they are not discovered and destroyed, they may issue forth at night and make sad havoc.

Winter Treatment.—The operations for the winter treatment are easy and few. I suppose this season to commence about September. They will then, or, at least, should, be completely at rest; but as frosts may then be expected it will be prudent to protect them, and as a removal to effect this must be determined upon, it will be well then to repot them at once. That operation enables us to get rid of all worms or slugs that may be in or about the pots. I need not repeat how to repot them, as I have already sufficiently described how to perform that operation under the head "Potting." When all are potted, then place them in a cold frame, on a thick bed of coal-ashes or sawdust. If the latter is used, place a thin layer of soot over the soil first,—this will effectually prevent worms from penetrating through the sawdust into the pots. In this position they will require no water, and should have the lights drawn off all fine days; even if a little frosty it will not hurt the more hardy kinds. The *C. persicum* requires a somewhat different treatment; it is a decided greenhouse plant; and when repotted, which it should be at the same time, it should be placed on the greenhouse shelf immediately;—the cold frame is too cool for it, even if well covered-up; besides, it flowers much earlier. I have a fine plant of *C. persicum rubicum*, a splendid variety, now, at the moment I am writing, in fine flower.

During severe weather it will be advisable to cover-up even the more hardy ones with a mat or two, to break off the ill effect of long-continued severe frosts; but as soon as the leaves grow remove the plants into the greenhouse. These plants always, excepting *C. persicum* and its varieties, may be grown out-of-doors; but as my allotted space is full, I must defer their culture out-of-doors to another opportunity.

T. APPLEBY.

(To be continued.)

STOVE FERNS.

(Continued from page 206.)

DRYARIA TRIODES (Iris-like).—An East Indian Fern, of a rather coarse habit. Fronds simple, of a long spear-like shape, sometimes lobed at the margin. The seed-vessels are very small, and thickly placed on the upper part of the fertile frond. In this Fern occurs the rare case of having the veins in the interior of the frond. Easily increased by its creeping rhizoma. It is very suitable to grow under large Palms, or other tall-growing stove trees.

D. LONGIPES (Long-stalked).—Another East Indian Fern, with a peculiar long leaf-stalk, hence its specific name. The fronds grow three feet long, and are pinnate and leathery; the pinnae grow laterally and have segments very broad towards the base; seed-vessels large, in two rows. Increased by dividing the creeping root-stock.

D. MELANOCOCCA (Black-stemmed).—An East Indian Fern, of a tall, graceful habit. The fronds reach frequently the height of three feet, and are pinnatifid; the pinnae are distant from each other, and are rather sharp-pointed, and of a light green. The seed-vessels are large and placed in one row, rising up above the surface of the frond. It is a fine Fern, easily grown, and increased by dividing the creeping rhizoma.

D. QUERCIFOLIA (Oak-leaved).—This fine Fern has a wide geographical distribution. It is found in all the hottest parts of the East. Fronds various—one variety has no fertile fronds, at least, not cultivated in our stoves. The fronds of this variety are sterile and pinnatifid, with deeply-cut segments, approaching to the form of the oak-leaf. The real well-defined species has both sterile and fertile fronds on the same plant. The sterile fronds have no stem, are heart-shaped, and jagged, or waved, at the edges; the fertile fronds have a short stem, are pinnate with narrow segments, each segment having a thick binding or edge. The seed-vessels are circular, and are placed in groups over the under surface of the leaves. Both are well worthy of cultivation. I have grown the species on a low shelf, far from the light, with the pots plunged in moss, into which the roots ran freely, and by this moist, steady treatment they grew very satisfactorily. I found it easy to increase by division.

D. VULGARIS (Common).—This is the *Polypodium phymatodes* of Linnæus. It is a handsome, broad-leaved Fern, from the Malay Islands and the Mauritius. The fronds are pinnated, and grow more than a foot long; each division is almost triangular and broad. The root-stock creeps very much, is black and scaly. The seed-cases are round or oval. I once had a large plant of this fine Fern under my care, growing in a large wire basket, the creeping root-stocks grew through the meshes of the basket, and threw out, as they crept round it, their large, broad fronds. It was a noble plant, measuring full two feet diameter, and was much admired. It will, however, grow very well in a pot, or amongst rockwork in the stove. The plant alluded to would have made (I speak within bounds) at least a score of plants had it been divided. This example shows that it is easily increased by that mode.

ELAPHAGLOSSUM.—A genus formed from *Acrostichum*; distinguished from that and other allied genera by its simple fronds with forked, distinct veins.

E. CALLEFOLIUM (Calla-leaved).—A Fern from Java, that hot country, hence it requires the warmest part of the stove or orchid house. It has barren and fertile fronds, the former rather broadly acuminate, or sharp-pointed, shining deep green, with wavy edges; the stems are of dark colour underneath. The fertile fronds are narrower and more erect. Both fronds grow about a foot high, and are jointed at the base. The root-stock creeps, hence it is easily increased by division. A desirable species for any collection.

E. CRASSINERVA (Thick-nerved).—This West Indian Fern may be distinguished from the last by its stouter leaves and thicker veins, and by the height of the barren fronds. These attain, frequently, two feet in height, whilst the fertile fronds never exceed one foot. The barren fronds are also undulated, and of a dull green. Easily increased by dividing its short, creeping root-stock.

E. CONFORME (Conformed).—A species nearly hardy enough for the greenhouse, but thrives better in a cool stove, through the winter. It is from the Cape of Good Hope, where it is found growing on shady rocks. The sterile fronds are very beautifully veined with almost perfect regularity, and of a long oval form, narrow at the base, and terminating in a sharp-point; growing about a foot high. The fertile fronds are much smaller, and covered throughout with seed-vessels. The root-stock creeps, and is covered with scales. Increased by division. It is a pretty, neat species, and worthy of general cultivation.

E. DOMBEYANUM (Dombey's).—A South American Fern, remarkable for having the sterile fronds thickly covered with star-like scales. The form is blunt, line-shaped, narrowed at the base. The fertile fronds have stems nearly half the length of the frond, and are of the same shape, excepting they are more pointed. The

root-stock creeps, and therefore it may be increased by division. A very distinct and well-defined species that ought to be in every collection.

E. LONGIFOLIUM (Long-leaved).—This is the tallest species of the whole genus, growing in its native country (West Indies) fully two feet high. Sterile fronds, long-lance-shape, narrow at the base, and sharp at the extreme point, and rather wavy at the edges. Fertile fronds erect, and the same form, rhizoma creeping, and easily increased by division.

T. APPLEBY.

(To be continued.)

TREES ADAPTED FOR PARK SCENERY.

It is too often the case, that in spite of the efforts we make to cast off prejudice on one side we are fostering it on another. Indeed, so much so, that honest John Bull seems at all times the victim of quackery. Only very recently he was led to believe in the prophetic revelations of polished timber, when it had, by the carpenter's assistance, assumed the form and exercised the functions of a table; while only a short time before that certain lecturers assured us they exercised an almost irresistible control over the minds and persons of many of their hearers. These sciences of Table Turning and Electro Biology had, in their turns, obtained so many disciples and believers, that it afforded grave doubts with our elderly worthy dames if their marvellous disclosures had not some connection with the Prince of Darkness; unfortunately for society at large it did not appear that either art, for it is not just to call them sciences, was ever applied to any useful purpose, so that they seem likely to pass into oblivion without leaving a trace of that utility behind them which now-a-days forms a leading feature in every thing that is inquired for. However, it is not likely to be long ere another subject of novelty (it would be treason to call it quackery so soon) takes the place of the discarded ones, and John Bull will run as eagerly after it as if it were the first shadow he ever followed. Fortunately, there are sober moments, and, as it has been often remarked, the most sensible periods are those which follow in the wake of the grossest folly, we may pardon our volatile nature for now and then having a rambling fit; but these sudden departures from old and well-established rules are not the only errors we run into, others equally unpardonable are enacted every day. In our generalization system we seem to make too few exceptions, and a rule, if once laid down, and receive the stamp of society at large, is rarely withdrawn, even if it be after found to be fallacious, and those who are convinced of its being so, are not always the first to abandon the idea. Few people, now-a-days, profess to believe in the prophetic notices contained in a weather-predicting almanack, yet Francis Moore's publication is, perhaps, as much patronised as ever, and his mysterious out-pourings are annually set forth to puzzle those who take the trouble to read them, while in many other things the case is the same as in that of almanacks.

Now, though the above may not seem to have any connection with the ordinary affairs of horticulture or agriculture, yet the same spirit now and then exhibits itself in these sciences. A plan—a mode—or an idea—put forth on the authority of some aspirer after fame, is received for a time, and the thing is lauded as being a boon to society, before which the steam-engine or printing-press sink into insignificance. By-and-by, however, its demerits are found out, and it takes its place according to its worth, and not unfrequently, when it has been publicly found out of occupying a higher place than it deserved, it has received a corresponding severe degree of punishment, and been condemned with more harshness than justice. Now, in accordance with this rule,

some useful plants and fruits have been cast aside because their adopted sponsors had the imprudence to laud them to a degree they did not deserve; however, their resuscitation has often been effected through the instrumentality of their accusers carrying their malice too far, as well as from the aid of their friends' good word; still, after all that, now and then false ideas will creep in and maintain a place, as it were, backed only by the traditionary story which gave them their origin.

I should think there are no readers, from those just removed from the Primer upwards, but are aware how much the Oak has been praised as possessing all the qualities in itself which a multitude of other trees only contain amongst them. Its general features, size, form, foliage, and the manifold uses of its timber, has, with other considerations, conspired to render it the especial favourite of the poet and naturalist, while a sort of veneration seems to hang over it in the less informed class who are not readers, from the reports they have heard of the useful part it takes, or has taken, in contributing to our national greatness. This feeling, alas! threatens to become an erroneous one, since the quantity of home-grown Oak timber, now used in ship building, forms but a very small portion of what is used in that way; however, we do not attempt to deny it the place it has so deservedly attained, neither do I condemn it as lacking those points so much insisted on by its admirers, but I do condemn those who can see neither beauty nor utility in other trees, merely because they are not Oaks. Now, as all trees are not necessarily wanted for the same purpose, it follows that those of other kinds may be equally useful in their respective ways as Oaks. Carts, waggons, and buildings, are equally necessary to a comfortable existence as ships, and timber to make them must also be had somewhere, and the weight of Oak, with some other faults it has, renders it not the most prized timber for articles of a locomotive character; however, I will waive this point also, and leave the wheelwright and other village mechanics to urge their own case with the self-constituted patriot who will only plant Oaks on his domain, and confine my remarks to its merits and demerits as a park tree for giving effect to the general scenery there.

I readily grant, that if we take a general survey of many domains, or even districts, that the Oaks will be found to exercise a wonderful influence in giving these districts a character, more so than any other tree planted there; however, there are other places where others predominate, as well by their size and utility as by their numbers; and, moreover, some of them present as fine appearances, when we can divest ourselves of the poetic feeling the Oak inspires, as does the King of the Forest himself. Might I ask, how much does the *Beech* avenue lack in the shape of pictorial beauty? And even as a single tree it possesses many of the good qualities ascribed to the Oak: its foliage, in summer and autumn, presenting as many points to the landscape painter as the Oak does, and in winter its feathery boughs are no less pleasing. There are many fine *Beech* avenues attached to country mansions, and they are, possibly, as much regarded as Oaks would have been in their places. Then we have the *Elm*, which also makes a fine avenue, growing quicker than either Oaks or *Beeches*; but it is not so long-lived, only in places where the soil is suitable it gets larger than either the above, and *Elm*-trees of extraordinary size are not uncommon, while very large Oaks are not so plentiful; but I cannot say that I approve of the *Elm* avenue, and still less of its appearance as a single tree;—but it has its merits, and deserves attention.

In dry situations, in the south of England, the *Sweet Chestnut* often forms a pretty object as a park tree, and for an avenue, it is, perhaps, not exceeded by any; but its timber is not so valuable as Oak, which, in some

respects, it resembles, as it is liable to splinter when sawn up, so that timber-merchants do not like it, although, in point of durability, &c., it is fully equal to the Oak; while, for appearance, its glossy green leaves, and its no less interesting flower in August, render it very attractive, and its winter appearance is not bad. I believe it is longer-lived than the *Elm* and some other trees; but, as I say, the timber deteriorates in value just as it gets the size that is most wanted for ship-building and other purposes, and this bad property seems to be the same on all soils.

Amongst a host of other trees having expanded tops, the *Sycamore*, *Lime*, *Norway*, and *Common Maple*, have all their respective claims, and some planters insist much on the merits of the *Lime* as a park tree or one suitable for avenues. Its quick growth certainly entitles it to respect, but some of the hard-wooded kinds are certainly more appropriate in many points in view. The *Sycamore* is also a quick-growing tree, and far from being unsightly, although, in point of interest, it must succumb to the *Walnut*, which is more deserving of attention than any of the last-named; while the *Horse Chestnut* has also its admirers, and as a single tree it is excelled by none, but its uses in forming an avenue or group is somewhat questionable, and its coarse, rampant growth makes its appearance less graceful than many other trees; it, however, grows very fast, and if mixed with other trees speedily overtops many of them.

In thus mentioning many of the common trees which give effect to our landscape, we must not forget one which is but rarely planted, and certainly deserves more attention than it receives,—the common *Wild Cherry*, which, when in flower, forms a very pretty object, and when not so, its upright growth is not at all ungraceful. It certainly looks as well as the *Poplars*, which are here and there admired, but which ought to be sparingly introduced into groups or lines in park scenery, but they are useful in the continuous belt, where the latter is indispensable, because, overtopping everything else, they break that monotonous outline the belt so often presents. However, as my present paper has far exceeded the limits I intended for it, I must cease, but send a few more remarks hereafter in continuation of this subject, relating to such trees as are less common, and venturing a few observations on the recently imported ones, more especially on the *Pinus* tribe, which some planters think will effect a revolution in our forest trees and woodland scenery; but without denying these interesting trees the merit they deserve, I cannot bring myself to the belief that they will oust our own long-tried and trust-worthy native specimens, neither do I think they will even successfully compete with them in the points on which these admirers call their "forte," for I believe our own trees combine more of the truly beautiful and useful than any of these far-fetched and costly productions so much admired by the collectors of novelties.

J. ROBSON.

THE FATTING OF SHEEP.

(Continued from page 365.)

SEVERAL distinct systems of feeding are now in use. One, whereby the sheep receive the roots cut and placed in troughs, and an allowance of hay in addition; and another, in which they receive turnips and hay, with an allowance also of oil cake, or corn, or both. Believing, as I do, that both these methods of feeding are useful under certain circumstances, I cannot recommend one in preference to the other; but will proceed to state how, and in what manner, they may be both beneficially employed.

The former method is most suitable for the richest soils, where the use of oil-cake and artificial feeding materials, in addition to the consumption of a heavy crop of roots, would be found too stimulating for the cereal crops which usually follow. The latter is an excellent method of feeding Stock upon soils which require extra manuring, and when it is desirable to fatten the animals in the least time; for I consider the system of cake-feeding, although costly, yet highly advantageous, as it may be fairly calculated that about one-half should be charged to the stock, the other to the land as manure. There is yet another mode of feeding, whereby the Sheep are allowed to eat the roots on the land uncut, and receive, at the same time, cake, or corn, and hay; but this only applies to very dry soils, where the roots can be eaten upon the land without waste; for upon all other soils there would be a loss, by waste, equivalent to the cost of cutting, independent of the disadvantage to the stock.

In making a comparison of these modes of feeding, my experience teaches me that the Sheep will fatten as fast upon soils in general, when they get the roots cut and given in troughs, with a liberal allowance of good hay, as they will when allowed to eat the roots on the land uncut, and receive, at the same time, half-a-pound of oil-cake each, with hay. When Sheep are fed upon roots, for fattening, it is necessary not only that a sufficient provision be made, but that different kinds of roots should each be consumed at the period of the year when they contain the greatest amount of nutrition, and in order to secure this advantage, I would use them in the following order, commencing with the varieties of common Turnips, which may be continued till the month of December; after which time, the Swedish Turnips will be best, and may be continued up to the month of April—indeed, when sufficient care has been exercised in their preservation, they may be used with success through the month of May. In general, however, Mangold Wurtzel will be preferred at this time, and during the summer months. White Carrots are also beginning to attract the attention of graziers; and, as they are palatable and nutritious in an early state, October is not too soon for using them, and they may be continued in feeding up to the month of March. There have been tables published, showing the comparative nutritive value of these roots, obtained from analysis by different chemists, the results of which, if not actually alike, yet serve to furnish us with useful information. They are, by analysis, classed somewhat in the following order:—Mangold Wurtzel, the most nutritious; Carrots next; then Swedish Turnips; and last, being the weakest feeding root, the common Turnips. There is, moreover, another excellent feeding plant; and, although it cannot exactly be classed with roots or bulbous plants, yet it must not be passed over in silence. I allude to Rape. I do not recollect seeing any analysis of its feeding properties, but, as it is known to be very valuable and fattening, as green food, in the early part of the season, I consider it the

best farm produce for fattening Sheep, during the months of August and September.

My own experience enables me to recommend the feeding of Sheep with artificials, as they are called, in most cases where the land requires the extra manure which will be left by their consumption. In this method of feeding, regard must be had not only to the feeding value of the materials, but also to the money value of the article in the market; for, although the sagacity of buyers and sellers generally goes far towards assimilating the two values, yet there is often an advantage to be gained when purchases are made in anticipation. There is, also, much difference, as well as peculiarity, in the nutritive and feeding value of those substances which are comprehended in the list of artificial materials. There is some considerable difference in the value of cake, as shown by the chemical analysis of Professor Way, entered in the 24th Number of the Journal of the Royal Agricultural Society of England, and which places the English cake first as the most nutritious; it, at the same time, gives the feeding value of Rape cake as equal to Linseed cake, and also shows that the value of Peas and Beans are very nearly allied for feeding purposes. There is, also, a valuable and interesting statement of a series of experiments in the 33rd number of the above-named journal, carried out by Mr. J. B. Lawes, and although it relates to Pig-feeding, it is, on the other hand, quite sufficient to exhibit the value of the materials for feeding Sheep. It is there stated that the feeding value of pulse and leguminous crops, such as Beans, Peas, Tares, Lentils, &c., is found to be greater than that of the cereal crops, such as Oats, Barley, &c. Now, although we shall do well not to entirely disregard the evidence of chemical analysis, it is, nevertheless, desirable to enquire how far these results coincide with our own practical experience of their value. I find that American Barrel-cake is superior in feeding value to any other Linseed-cake, and it carries in the market a higher price, showing, also, that it is estimated as superior by feeders in general. There is, however, nothing in the above-named analysis which justifies these conclusions.

Another instance must be noted in which experience and practical application corroborates the accuracy of the analysis, thus, Mr. Pusey finds that his Sheep do equally well upon Rape-cake as they do when fed upon the like quantity of Linseed-cake; my own use of it supports Mr. Pusey's statement as regards the feeding of Teds or Hoggets, but not so as regards the feeding of older Wether Sheep, or Ewes, and fattening Lambs, more particularly when given in admixture with Linseed-cake, for I find that the Stock will eat the Linseed-cake in preference, it being more palatable than the Rape-cake, although, probably, not more nutritious. I find, also, that Sheep sometimes eat the Rape-cake very well for awhile, but after they get into good condition, and well-advanced in fatness, that they refuse it altogether, particularly when they receive an allowance of well-made Clover Hay. One thing, however,

must not be overlooked, in case of waste, or dropping-out of the feeding troughs, it may be considered that Rape-cake is worth all its cost as manure, whereas Linseed-cake, under the like circumstances, is not worth more than two-thirds of its cost in the market. Reverting to the use of corn and grain for feeding Sheep, I must observe, that it is bad practice to use any of the leguminous crops in the fattening of Sheep, except in admixture with cake, and they are then required only for about a month, at the latter part of the fattening process of wether Sheep, or aged Ewes, for the purpose of rendering the flesh firm. They may, however, be used for fattening Lambs or Hoggets throughout, the excess of Nitrogen they contain acting favourably in the production of flesh in all young animals. I condemn the feeding of fattening Sheep with Oats, Barley, Indian Corn, Bran, &c., being both wasteful and unprofitable, as compared with oil-cake and the legumes.

The opinions here advanced are based upon my own observations, and they are strongly supported by the late experiments of Mr. Lawes. There is, however, one important point worth observation, and which Mr. Lawes has exhibited; that the residue of the legumes, after consumption, is of more value as manure than that to be obtained from the Cereals.

JOSEPH BLUNDELL.

(To be continued.)

SEA WEEDS.

(Continued from page 350.)

THERE is something very surprising in considering the spores or fructification of marine plants; so minute, that, even with the assistance of the microscope, there is as yet considerable obscurity regarding them. Specks, so small as are these spores, not visible to the naked eye, and yet each tiny atom containing *life*, and capable, under favourable circumstances, of producing plants, some of which are of large dimensions, is a fact so wonderful, that the mind is lost in the contemplation of it, and is led from the astonishing effect to the first Great Cause; to Him who in *wisdom* has made all; whose works do, indeed, praise Him. There are wonderful things lying hidden in the mighty deep! Many which are rarely seen by man, and many which are passed by, either because they are common, or the attention has not been directed to them, or from a want of knowledge of their beautiful structures. I can assure my readers, from experience, that an interest in the beautiful plants of the ocean is much to be desired. Many an hour, which would have been passed by the invalid in comparative dullness, has been cheered and made delightful by the arrival of some of these interesting objects, and sometimes even a sleepless hour in the night has had light thrown upon it by the remembrance of their wonderful beauty. And what an inducement, for those who are ordered to the sea-side, to walk out, day by day, in search of them, when, under other circumstances, they would have wandered listlessly about, and not have received half the benefit; for it is of great importance that the mind should have healthy exercise, as well as the body, so closely is the one connected with the other.

ORDER 11.—RHODYMENIACEÆ.

Red or purple Sea Weeds, with a root like a disk, but sometimes branched and matted; "Frond very variable (says Harvey) in habit and colour, either leafy or filiform, or much branched; in some an intense scarlet; in some crimson; in others brown-red or purple; the substance is rather thick.

1. STENOGRAMMA.

Named from two words signifying narrow, and a line, because the fruit is in lines.

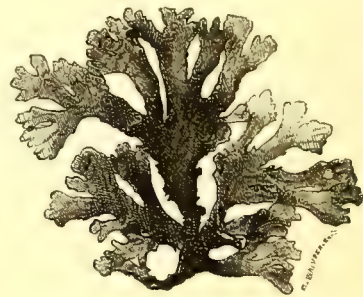
1. *S. INTERRUPTA*.—This plant, which is washed up from deep water, is very rare, though Miss Gifford has found it in tolerable abundance at Minehead, in Somerset. It is of a fine red and much lacinated; fan-shaped, and rather resembling *Rhodymenia palmetta*; from three to five inches long, and about as wide.

2. RHODYMENIA.

From red, and a membrane.

1. *R. BIFIDA* (Two-cleft).—A rosy-red, transparent, thin frond, forked from the base; "the margins fringed with ciliæ."

2. *R. LACINIATA* (Torne).—This beautiful weed grows



upon rocks and stones in deep water; the frond is rather cartilaginous, of a bright red, fan-shaped, flat, and much divided in a wedge-like manner. The margin, when the plant is in fruit, fringed with "ciliary processes, in which the tubercles are placed, or with tetraspores forming cloudy spots along the margin." I found this weed in great abundance and remarkably fine at Spittal, near Berwick-upon-Tweed. It is also plentiful in the Isle of Man. The fronds are sometimes ten inches long. It makes very handsome specimens for the herbarium.

3. *R. PALMETTA* (Fan-like).—Fronds of a rosy red, and more or less forked, fan-shaped; "rather rigid, and not adhering well to paper."

4. *R. CRISTATA* (Crested).—I have only seen one specimen of this rare plant, kindly sent me by the Rev. Dr. Landsborough. Harvey speaks of it as very rare, and quite a northern species. "Fronds about an inch long, divided near the base into several main branches; substance membranaceous; adhering closely to paper in drying."

5. *R. CILIATA* (Fringed).—Frond thick, and of a purple-red; much lobed, and fringed with ciliæ; on rocks and stones.

6. *R. JUBATA*.—On rocky shores; fronds lanceolate, narrow, and becoming much more so at the top; colour dull red; adhering well to paper when not too old. This plant varies much. It is not uncommon on the Cumberland coast.

7. *R. PALMATA* (Hand-shaped).—This is the well-known *Dulse* of Scotch, and in Ireland is called *Dillisk*; happily it is very common, and is much used as an article of food, either raw or cooked; the shorter plants are thought the best; sheep feed upon it. The frond is wedge-shaped, broad, and much divided. It grows on the stalks of *Laminaria digita*, as well as upon rocks. I extract the following passage from Dr. Landsborough's "British Sea Weeds:—"Dr. Greville says, that *Dulse* is the true *Saccharine Fucus* of the Icelanders. According to Lightfoot, it is used medicinally in the Isle of Skye, to promote perspiration in fevers. In the islands of the Archipelago, it is a favourite ingredient in ragouts, to which it imparts a red colour, besides rendering them of a richer and thicker consistence. The dried frond, like many other algae, when infused in water exhales an odour resembling violets; and Dr. Patrick Neil mentions, that it communicates that flavour to vegetables with which it is mixed. Dr. L. also says, that by the Highlanders it is called *Duillisk*, which is a word compounded of two Gaelic words, *duille*, a leaf, and *uisge*, water, i.e., the leaf of the water. From *uisge*, is derived the word

whisky; and, with the addition of *baugh*, life, we have the usquebaugh of the Irish (*aqua vite*), water of life; with how much more propriety might it be called the water of death! The Highlanders and Irish used to dry it in the sun, and chew it as they now do tobacco.

3. SPHÆROCOCCLUS.

Fronde cartilaginous, compressed, two-edged, linear, distichously branched, with an internal rib, cellular. Name from a sphere and fruit.

1. *S. CORONOPHOLIUS* (*Coronopus*-leaved).—Fronde cartilaginous, much branched, and, at first sight, not unlike coarse specimens of *Plocamium coccineum*. It is a handsome plant, of a fine red colour; fronds from six to twelve inches long.

It grows on rocky shores, is not uncommon in the south of England and Ireland, but is rare in Scotland. Dr. Greville has found it in Bute; I have had it sparingly from the Isle of Man. S. B.

(To be continued.)

ROUP.

I AM surprised you should admit the publication in your paper of such dangerous theories as Dr. Horner's have proved to be. I have, for a long time, been in the habit of placing implicit confidence in the correctness of opinions recorded in your paper. I am sorry to say I can do so no more. I consider it the duty of an Editor to thoroughly sift such communications, or, at any rate, to caution his readers. I regret to say that I introduced a roupy fowl to my stock entirely in consequence of Dr. H.'s assurance of this disease being *non-contagious*, and the result has been most disastrous. My only wish is that I could come upon him for damages; I would certainly do it. To think of my losing a score of valuable fowls through such assurance! * * * * I must request the insertion of this communication (or part of it), as a solace to my feelings, and a caution to others.—ELIZA BATEMAN, *Loughborough*.

[Our correspondent is too hard both upon Dr. Horner and ourselves; and we must think her own rashness is most to blame. Dr. Horner stated his opinion rather strongly, it is true; and for ourselves, if our correspondent will refer to page 232, she will see that we there said—"We should no more think of putting healthy fowls into a house and walk where *roup* had prevailed, than we should of putting a healthy horse into a stall where a glandered horse had been living." Besides, Mr. Tegetmeier and Mr. Brent have recorded similar opinions, so that our correspondent was rash in acting as she did.—ED. C. G.]

In addition to the above, we have the following from W. Lort, Esq., of Great Heath, Tenbury, well-known as an experienced breeder of fowls:—

"For the last two months I have been devoting much time to experiments upon roup fowls. I have now no hesitation in pronouncing Roup highly contagious, so far as Dorkings are concerned, and that Cochins will catch this complaint is pretty evident. I have succeeded in giving the Roup to several healthy fowls by allowing the dead body of an old roupy cock to remain with them in an out-building for about three days. Three of the fowls thus infected were young Dorkings, and the other a Cochinchina pullet. The former are now quite cured, but the Cochinchina, as she appeared to eat her food well, I was inclined to let take her chance; she died in about a fortnight from the time she took the disease, without having diminished much in weight, and with a crop tolerably well supplied with grain. How these birds caught the disease from the dead one I do not pretend to say. Mr. Tegetmeier, and he is generally pretty sound in his opinions, has intimated that the disease may be communicated by the birds picking the dried matter from the heads of their companions. This might have been the way the disease was taken from the dead bird; but, as I have before said, I venture no opinion as to how the disease was taken: I only know that it was communicated by a dead bird, and in a very malignant form. It behoves those who have roup fowls to remove them at once to some dry, clean place, as far as possible from the rest of the poultry.

"That part of your report of the Shropshire Poultry Show which has reference to the *Malays* is somewhat incorrect. The first prize was withheld from a pen of old fowls in heavy moult, but my chickens obtained first and second prizes."

THE ROSE GARDEN.

WE have before us the "Supplement," just published, to "The Rose Garden," written by Mr. W. Paul, the well-known Nurseryman of Cheshunt. When we say that it is a worthy continuation of that excellent book, and that the four coloured portraits of Roses are as beautiful as those which have preceded them, we have said enough to commend it effectually to our readers.

The following extract states Mr. Paul's estimate of the recent additions to the various families of Roses.

"In Groups 1, 2, and 3, the 'Boursault,' the 'Double Yellow,' and the 'Scotch,' no valuable additions have been made. In Group 4, the 'Damask,' we have a White Rose, 'Harriet Martineau,' which, during the past summer, was the finest of White Roses. We remember to have seen this variety in bloom four or five years ago, when in the hands of one individual, and were struck with its purity and beauty. For three years, however, it gave but indifferent flowers here, and can therefore at best be pronounced but an uncertain Rose.

"To Group 5, the 'Provence,' we have added an excellent variety in 'Dometille Becar,' like others of the group, it requires a rich soil and good cultivation.

"Group 6, the 'Pompon,' presents us with no additions.

"Group 7, the 'Moss,' has been the most fertile of Summer Roses in the production of new varieties, but it is in quantity rather than quality. Of the forty-three additional varieties here described, I have seen rather more than one half, four of which I can with confidence recommend: these are, 'Duchesse d'Abrantes,' 'Latone,' 'Purpurea rubra,' and 'Princess Alice.' It must be told, however, that many were seen blooming under disadvantageous circumstances; and if at present we are in the dark as regards the quality of the flowers, in habit of growth many of the new kinds are decided improvements. The 'Moss' appears the most obdurate of Roses, almost incapable of improvement by seed; and I believe many of our best varieties are the result of 'sporting.*' The 'Moss Princess Alice,' first offered for sale this year, is the first-fruit of a sowing made in the Cheshunt Nurseries in the Spring of 1847; so slow is the process of blooming, proving, and bringing into a saleable condition, the varieties of this group. It is a great improvement on the general run in regard to growth, which is so vigorous, that it quickly forms a large umbrageous tree, flowering abundantly: the flowers resemble the varieties of the 'Alba,' being blush, with pink centres.

"It must be a source of surprise to those cultivators who are not acquainted with the commerce of the Rose, that the 'French Rose' (Group 8) has of late produced no new varieties worth notice. How is this? It is that the group has been so many years cultivated, and consequently improved so much, that floricultural skill could go no further? Certainly it is one of the oldest groups, and counts more varieties than any other; but there is ample room for improvement yet. The reason is not this: it is, that the Summer Roses generally are at a discount. A good seedling French Rose is as difficult to originate as a good seedling Perpetual; and, when obtained, does not realise one-fourth the price. The raisers are aware of this, and follow that course of culture which promises the greatest recompense.

"Let us pass to the next group, 'Hybrid French,' which offers one variety, 'Comtesse de Segur,' of great beauty. The flowers are neither large nor full, so that it scarcely answers as a Show Rose; but they are exquisitely shaped, and of a very pleasing colour.

"Group 10, the 'Hybrid Chinese' has received several additions. One only, 'General Lamoricière,' seems to require particular notice. It differs widely from its congeners. The flowers are pink, the petals increase in size from the centre outwards, so that, although perfectly double, they

* See "Rose Garden," Division II, p. 32.

are hollow in the interior, like a cup. It often blooms in the autumn, and, we doubt not, will eventually do so constantly, and thus become a 'Hybrid Perpetual' Rose.

"The 'Hybrid Noisette' (Group 11) presents us with nothing new; but the 'Hybrid Bourbon' (Group 12) has been more generous. Frederic the Second is a capital Climbing or Pillar Rose, with large purplish-crimson flowers, well shaped, but not quite full. Paul Ricaut is certainly one of the finest of Roses: the boldness of growth, and the rich bright crimson hue of the flowers, must render it an universal favourite. It is equally good for a Standard or a Pillar. Vivid (Paul's) is something of the style of the latter. It is a smaller flower, but of a richer colour, and far more velvety: it is of vigorous growth, very hardy, and will form one of the most Striking of Pillar or Climbing Roses.

"The remaining groups of Summer Roses offer nothing very remarkable. We were looking with hope towards the Roses from China, introduced by Mr. Fortune; but these, however interesting in a botanical point of view, do not possess the attributes required by the florist. Fortune's Climbing Yellow, if hardy, may make a valuable addition to our Climbing Roses; and the Banksia Fortuniana will probably make a useful Wall Rose, more showy than the old variety, as its flowers are twice the size.

"We now pass the second class, 'Autumnal Roses,' the first five groups of which require no special notice.

"The 'Hybrid Perpetual' (Group 27) has, within the last five years, given us more fine new varieties than all the other groups together. Sixteen years ago there was but one variety; at the time of the publication of the 'ROSE GARDEN,' 1847-48, there were 107; and now we have no less than 257; giving an increase of 150 varieties in five years! Some of these are of surpassing loveliness, and we shall proceed to note the names of those which have most delighted us, referring to pp. 15-22 for descriptions of them:—Alexandrine Bachemeteff, Angelina Granger, Auguste Mée, Baronne Hallez, Baronne de Heeckeren, Blanche (Portemer), Caroline de Sansal, Cheraeu, Comte Odart, Comte de Nanteuil, Destigny, Duchesse de Praslin, Duchesse d'Orleans, Enfant du Mont Carmel, Eugene Sue, Ferdinand Deppe, General Bedeau, General Brea, General Castellane, General Cavaignac, General Negrier, Graziella, Inermis, Joan of Arc, Lady Stuart, Laura Ramand, Louise Peyronny, Madame de Manöel, Madame Ducher, Madame Fremion, Madame Guillot, Madame Louise Thenard, Madame Pepin, Madame Rivers, Mère de St. Louis, Noemi, Paul Dupuy, Prince Leon Kotchouby, Queen Victoria (Paul's), Rosine Margottin, Salvator Rosa, Souvenir de Leveson Gower, Standard of Marengo, Triomphe de Paris, Volta, William Griffiths. This may appear a long list, but it may be depended on as containing the names of varieties of first merit only. It were easy to add as long a list of other interesting varieties, well worthy of culture; but these we consider altogether indispensable to every amateur.

"If to the next group (28), the 'Bourbon Perpetual,' so many varieties have not been added, it is yet as remarkable for improvement: we may almost say it has given birth to a new style of flower, at the head of which stands Louise Odier. These Roses, many of which were originated at Lyons, are of vigorous growth, producing long shoots well clothed with handsome shining foliage. The flowers, if well formed, are not generally large, therefore they cannot be recommended as Show Roses; but they flower so abundantly throughout the autumn, which many of the 'Hybrid Perpetuals' do not, that they are even more desirable where the object is to have a good supply of Roses late in the year. Louise Odier, Colonel Foissy, Dr. Juillard, Prairie, and Reine Mathilde, are the most striking novelties. If allowed to look into the future, we should assign to this group a distinguished position among Roses at no distant period.

"Group 29, the 'Rose de Rosomène,' furnishes a remarkable Rose in 'Comte Bobrinsky'; the habit is dwarf; the flowers varying much in quality and colour: opening sometimes beautifully, and almost scarlet. In 'Souvenir de Madame Lille' we have a seedling from 'Geant des Batailles': the flowers are much darker, rich in appearance, and nicely cupped.

"In group 35 we find the 'Tea-scented.' Among them, Canary is pretty in bud, but only semi-double when expanded. It appears a vigorous, hardy kind, and the buds

have a charming effect on the trees in the distance. Madame Villermoz is a fine bold Rose, with handsome foliage. 'Sombreuil' is also a variety of great promise. The past summer has been most unfavourable for these Roses, consequently it is difficult to form a judgment of many that remain; but, as far as we can at present pronounce, we are not sanguine in regard to the new kinds.

"The 'Bourbon' (Group 36) has given us darker and brighter flowers, both of which were much wanted. Apolline, Aurore du Guide, Jury, Madame Cousin, Madame Helfenbein, Prince Albert (Paul's) Reveil, Scipio, Sir J. Paxton, Souvenir d'un frère, and Vorace, are the best of the numerous kinds recently added, and often continue flowering till the blossoms are destroyed by frost."

BEE-KEEPING FOR COTTAGERS

(Continued from page 311.)

Condensers—Feeders, if left on after feeding is over, will fulfil all the purposes of a condenser: a condenser, as its name imports, is used for collecting and condensing the perspiration that in the winter, rises from the bees, and, unless carried away, settles upon the combs, and causes them to turn mouldy and breed disease. If you have not as many feeders as you have hives (and it is not at all necessary you should have, for none of your hives, if properly managed, ought to want feeding at all), a large gallipot, or bee-glass, turned upside down in a zinc trough, or even placed upon a piece of metal, with a large hole in the centre, and set over the hole in the centre of the hive, will make as good a condenser as anything: should a piece of metal and not a trough be used, it will be necessary, every three or four days, to turn up the gallipot or glass, (first slipping a plate of tin or zinc under it, to prevent much cold air entering the hive), and wipe away the moisture that will have collected on it, and the metal: the condenser, in winter, tends as much as anything to preserve the health of the bees.

Fumigators.—The kitchen-bellows may be easily used for smoking hives; it will only be necessary to have a tin tube, about three inches long and two inches across, made to fit over the air hole; at one end of it there must be rivetted a piece of perforated zinc; at the other there must be a movable lid made of a similar material. It will also be well to have a flat box, about two inches broad, four inches long, and half-an-inch deep, with a piece of perforated zinc fitted to one end, and a tube somewhat larger than the nozzle of the bellows fitted to the other, so as to make a box something like a flat watering-pot rose: this box is to be inserted, on operating, into the mouth of the hive, and fixed there with some bits of rag, or list: the object of it is to give the operator a freer use of his hands than he would have if the nozzle of the bellows were to be introduced into the hive. The material to be used in this is what is called Devil's Snuff Box, Fuzz-ball, or Puff-ball; it should be gathered nearly ripe, dried in the sun, and kept dry. Country folk can generally get this pretty easily from the fields; when, however, it cannot be procured, the *Rocodium cellare*, or dark cobweb-kind of stuff that may be found in most wine-vaults, will answer the purpose equally well.

Bee-Dress and Gloves.—Whatever may be said about coolness in operating being the best protection against stings, it is always desirable to be protected; in fact, the necessary coolness can only be obtained after many years experience, and then only by a favoured few. Do not, then, despise a bee-dress and gloves. The thick leather gloves used by hedgers, drawn well up the coat-sleeves, or a pair of thick woollen gloves, lengthened gauntlet fashion, by having a pair of old stockings with the feet cut off sewn to them, will effectually protect one's hands, whilst a thin gauze or leno sack, into which to put the hat, head, and shoulders, will do the same for the face: the lower end of this sack will be slipped inside the jacket, which must be then buttoned up; it will be even better to make armholes in the sack (which may be kept tight to the arms by means of india-rubber bands), and run a string into its lower end, so as to be able to draw up the whole bag-fashion tightly under the arm-pits: the broader the brim of the hat the better. As bees are unable to withdraw

their stings from *leather* gloves, it will be as well, if possible, to have the backs of them covered with some fur,—hare or rabbit-skin, for instance,—having, of course, the fur outwards.

Knives.—The two following knives will be found very convenient in operating, more particularly the latter of them; without it, great difficulty is experienced in cutting the combs from the tops of the hives. The first is merely a strong knife, made square at the end, and sharpened at the end and on both sides, so that it can cut downwards or either way; the second is a thin rod of iron, about a quarter-of-an-inch square, having a lancet-shaped head, welded at right-angles to the rod, and sharpened at both sides also, that it may cut both ways. Both these knives may be made of a good hard bit of iron.

Sieves.—One or more perforated zinc sieves, according to the number of old hives to be taken up every year, must be had for draining the honey from the combs. A sieve of this kind may be readily made by nailing a circular piece of perforated zinc to the hoop of an old worn-out hair sieve, or by making a rough box with sides, each about six inches broad, and with a piece of perforated zinc for a bottom. A common colander answers the purpose of drawing honey, perhaps, as well as anything.

Blocks.—These are merely small pieces of wood of the same depth as the entrances to the hives, and are made use of for narrowing the entrances in the months when the bees are idle, and when the hives are likely to be attacked by robber-bees: they should be of various breadths, varying from half-an-inch to an inch-and-a-half. Other and larger blocks will also be required for placing before the hive entrances in cold, or snowy weather, to prevent the sun's rays striking on the already narrowed entrances. Small pieces of inch-stuff, about three inches square, answer this purpose as well as anything: placed in front of, and nearly close to, the hive entrance in winter, they, in connection with the hackles and jackets already described, will effectually ward off the sun's rays and reflected light, and will assist in keeping the bees quiet.

Sundries.—You must also have several pieces of wood, about six inches square, to lay over the middle holes of the stock hives when the top hives are removed; several flat pieces of zinc or tin, of various sizes (from twelve inches by eight to six inches by six), some of the smaller pieces perforated; a small stoppered bottle of liquor potassæ, or cold lotion; a bit of tobacco; and some bits of linen or woollen rag: all these, as well as many of the smaller articles already described, and other little things that will suggest themselves in practice, may be conveniently kept in a box in some handy place where they may be got at any time.

Painting, though not exactly "apparatus," seems a proper end for this section. Everything about the bees that can be, should be well painted; things last three times as long and look infinitely neater in consequence. Painting can be done on fine, dry, mild days in January and February without injury to the bees.

(To be continued.)

SILVER-SPANGLED HAMBURGH'S CHARACTERISTICS.

In a recent number of *THE COTTAGE GARDENER*, I noticed, with much pleasure, some remarks made by you in reply to a letter written by Mr. John Brown, of Birmingham, on the subject of poultry judges having some positive rule to guide them in their decisions, more especially as regards Spangled Hamburg fowls. From the various and conflicting opinions we hear from persons who may be supposed to have some knowledge of the characteristics of this breed of poultry, and from the apparently extraordinary decisions we so frequently see at exhibitions, it is perfectly evident the time has now arrived that some positive rules should be laid down for the guidance of both breeders and judges.

Having, myself, for some time past, paid considerable attention to the Silver-spangled Hamburg fowl, I beg to request you will allow me a small space in your *Journal*, to express my ideas of what I consider constitutes the prin-

cipal characteristics of this elegant and useful variety of poultry, and in my views respecting them, *I know* I am supported by many of the largest breeders of this class of fowl.

The general impression amongst the best breeders is, that a perfect *Silver-spangled hen* should have a double, rosy, and erect *comb*, and not a lop-sided one, which we so frequently see; white *ear-lobes*, and, above all, every *feather*, from the head to the extremity of the tail, should be perfectly white, tipped at the end with black; this, from the feathers over-laying each other, gives an alternate black and white spot, producing in a perfect bird that beautiful spangled appearance from which this variety takes its name.

The *male bird* of the Silver-spangled breed should also have a double, rosy, and erect *comb*, terminating in a point at the back; white *ear-lobes*, and every *feather* white tipped with black to the extreme end of the sickle feathers of the tail, but from the great length of the neck and saddle-hackle of the male bird, it is almost impossible to produce that spangled appearance on the back which we always see in the male bird, and it is from this cause alone that the Silver-spangled cock shows so large a proportion of white feathers on the back.

Having recently seen a tendency among some of our poultry judges to award prizes to fowls in this class having the *hen's tail*, thereby showing a more spangled appearance on the back, I beg to call their attention to this particular point, that the male bird of the Silver-spangled breed ought to possess the drooping saddle-feathers, which adds so much beauty and elegance, as compared with the cropped and narrow appearance of the *hen's-tailed* birds.

I am aware that some of our poultry judges will differ with me in opinion as regards the retention of the saddle-feathers, but I do know, that in the districts of Yorkshire and Staffordshire, where this class of fowls is principally bred, none but birds having the saddle-feathers would be considered pure, and a *hen's-tailed* cock would be said to be crossed with the *Golden-spangled*.

This is a question upon which many of our judges are not agreed, and it is one that, for the guidance of breeders, ought to be settled. One judge awards prizes to *hen's-tailed* birds, another will not notice them. So well is this understood amongst many exhibitors, that when the judges are known, they exhibit accordingly.

Surely this ought not to be. Let us have some definite rules to guide us, and, depend upon it, first-rate birds will be produced. I hope you will render us your aid and assistance in endeavouring to settle this disputed question. —AN ADMIRER OF THE SADDLE FEATHERS.

[We shall be glad to have the opinion of other breeders of Spangled Hamburgs on this point.—ED. C. G.]

SILK CULTURE.

THE cultivation of Silk was confined for ages to China alone, and the Chinese guarded the secret from whence they derived such immense wealth with such extreme jealousy, that many of the ancient writers believed it to be a vegetable product, which we may infer from the following lines:—

"Nor flocks, nor herds, the distant Seres* lead,
But from the flowers that in the desert bloom,
Tinctured with every varying hue, they cull
The glossy down, and card it for the loom."

Marsellianus gives a more correct description from whence the Seres produced such a costly material. He says, they have an insect, which they rear in buildings, spinning a fine thread; and this statement becomes interesting, for it at once removes a mistaken notion that the Silk-worm, in countries where it is indigenous, is left to its natural state. On the contrary, wherever silk is cultivated as an article of commerce, the Silk-worm is artificially reared, and it is to the care of man for these little silk manufacturers that we are indebted for their beautiful filament.

It is well-known how reluctant the Chinese are to admit strangers, but, notwithstanding all their precautions, two Persian missionaries penetrated the country, and to them is accorded the credit of introducing this valuable branch of

* Seres was the name by which the ancients designated the Chinese.

industry into Europe. They observed with interest the labours of the little insect, and made themselves acquainted with the various processes of fabricating its produce, and succeeded in obtaining a quantity of Silk-worm eggs, which they concealed in a hollow cane, and safely conveyed them to Constantinople, in the year 552. The eggs were hatched in due season, and the insects thus produced were the progenitors of all the countless generations of Silk-worms in Europe, and have become, to many countries, a valuable branch of industry. From Constantinople it spread to Greece, Spain, Italy, France, Germany, and Holland. Even in Sweden and Russia, silk is successfully cultivated; and we trust, that the time is not far distant when England, so justly renowned for its industry and its inventions, shall also count its silk cultivators. Pullen says, in his Essay, "A lady, with a little trouble, may easily provide herself with a suit of silk."

It has been proved that 4,000 Silk-worms spin more than one pound of silk, which will make sixteen yards of *Gros de Naples*, sufficient for a lady's dress; and the time from the hatching of the eggs to the reeling of the silk is no more than six weeks. Attempts have often failed, by trying to substitute different food for that which is natural to the Silk-worm, for the insect will not thrive on any other food but the Mulberry-leaf; and Monsieur L. de Long Champs asserts, that the Silk-worm fed upon the white Mulberry-leaf produces a much finer silk than those fed upon the black; the former having the advantage also of coming into leaf at least a fortnight earlier than the latter, and of being most easily propagated.

The following is a statement of the result obtained by Monsieur Nourrigat, cultivator at Lunel, in the Department of the Herault, in France:

From 24 ozs. of eggs he obtained Silk-worms sufficient to produce 32 cwt. of cocoons; the worms requiring 321 cwt. of leaves, or 100 leaves for every five cocoons.

The cocoons were sold for £306 10 0

The expenses were 108 5 0

The Nett Profit £198 5 0

BOMBAY.

DISEASES OF POULTRY.

VERTIGO AND APOPLEXY IN LAYING HENS.

THE regularity with which certain diseases recur at particular seasons is not the less remarkable in feathered than in unfeathered bipeds. The commencement of the laying season has furnished me with an unusual number of cases of vertigo and apoplexy. The history of these cases is nearly, in all instances, perfectly identical; the birds well fed during winter become very fat, and as soon as the egg organs become active an undue determination of blood to the brain takes place, causing vertigo, when the hen staggers or runs round and round; in severe cases a small vessel gives way, and an effusion of blood takes place, which, pressing on the brain, causes apoplexy. (It may, perhaps, interest some of my professional readers to state that I have invariably found the effusion to take place at the base of the brain, and chiefly around the medulla oblongata; in fact, so low down does the extravasation extend, that it may be noticed in all cases where it exists by merely removing the atlas, without opening the skull; to do which, without injuring the brain, is attended with very considerable trouble.) Cases of vertigo may usually be successfully treated by holding the head of the bird under a stream of cold water, taking care that it does not run into the mouth, or the bird may be drowned; this should be followed by an immediate dose of five grains of jalap in powder, which, by its irritating and drastic action, will cause a determination of blood from the head to the digestive organs. (I may mention, in passing, that this is one of the very few cases in which jalap is a desirable medicine for poultry, its violent and weakening effect rendering it much less desirable than other aperients, as castor oil, &c.) This treatment, followed up by low unstimulating diet for a few days, will generally be quite successful. Should, however, the vertigo continue, or should apoplexy supervene, immediate recourse must be

had to copious bleeding; to perform this operation, nothing more is requisite than to stretch out the wing, on the under side of which may be observed several veins; the largest should then be freely opened with a sharp-pointed penknife, or lancet, when, if the finger is pressed on the vein above the opening (that is nearer the body), the blood, being arrested in its course towards the heart, will flow freely, and continue to run as long as the finger is kept in that position, ceasing on its removal. The quantity taken away must, in all cases, depend on the urgency of the symptoms; in apoplexy, the only chance of saving the bird is to continue until consciousness returns; and in vertigo, until the bird on being placed on the ground ceases to run round and round.

By adopting these means I have saved every bird affected with vertigo that has come under my notice; whereas, if left alone the disease generally terminates in apoplexy; and in the latter disease I have saved two valuable birds which I had the opportunity of seeing immediately after the attack.

I may mention, that these diseases occur also in male birds, although, as far as my experience extends, less frequently than in laying hens.—W. E. TEGETMEIER, *Willesden, near London.*

ROYAL SOCIETY OF VAN DIEMEN'S LAND.

THE monthly meeting was held on 10th September; Sir W. T. Denison, President, in the chair.

Among the presentations were, from Mr. H. Hull, seeds of *Martynia fragrans*, from the Mauritius, for the society's gardens.

From the Rev. Edward Freeman, of Brown's River, a specimen of drift wood cast up on the sea-beach there, upon which were fixed a congeries of curious ova-cells of a shell-fish.

From Sir W. T. Denison, a packet containing nineteen species of seeds from China, for the gardens.

From Francis Smith, Jun., Esq., a packet containing 120 species of Indian seeds, for the gardens.

A case containing thirty-nine plants has been forwarded to Auckland, and a case of New Zealand plants is expected in return.

A member suggested the great difficulty generally experienced in cultivating the conifers of Tasmania. Mr. Archer informed the meeting that his attempts with them had usually been successful, and that he had now, in a thriving condition in his garden at Cheshunt, (immediately at the foot of the Western Mountains), six pieces.

Mr. W. Archer submitted for examination, and explained at some length, a series of drawings made by him of certain galls or tuberosities, with turret-like processes, upon twigs of the *Casuarina quadrivalvis*, laid before the society a few months since by Dr. Officer, and of the animal contained, and promised to supply a description in writing for the next monthly meeting.

Mr. Archer drew attention to a small brown speck observable on the surface of oranges brought here from Sydney this season, and to the fact, that under each of these brown fungus-like scales he had found a minute living insect, little more than one-hundredth-of-an-inch in diameter.

Mr. Archer also laid on the table a curiously convoluted and fantastic growth of a shoot of *Casuarina* for inspection.

TO CORRESPONDENTS.

* * We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

CUCUMBER AND MELON HOUSE.—T. T. says,—“In No. 259 of THE COTTAGE GARDENER, I saw a plan of a ‘Cucumber and Melon House’ which was much recommended. We are about erecting a small house to grow early Cucumbers and late Melons, and to put a few stove plants in to flower which will not bloom in our greenhouse. We have five lights, 8 feet in length, and 3 ft. 6 in. wide,

which is sufficient for a house for us; it will have one roof to train the plants to. I intend having a short back roof, 2 ft. 6 in. wide, the two ends bricked to the roof. I intend the boiler to be at the east end, and the door at the other. My enquiry is, will the top pipes running in the chamber from one end to the other be sufficient to heat the house for Cucumbers during winter; and what will be the expense of the boiler, and the sized boiler required, and pipes; also, where they can be obtained; also the lights; it fronts the south; and is it best to have the two pipes in the chamber? I was thinking of having a flue along the back of the house, but only for occasional use." Two pipes in such a chamber will be quite sufficient to heat such a house, provided you have openings in the sides of the chamber to allow heat to get into the atmosphere of the house when necessary. It will also be necessary, in the case of Cucumbers and Melons, to have troughs fixed on such pipes, as mentioned in the plan, No. 259, p. 456; or, if you wish to avoid that extra expense, the pipes should be surrounded with rubble, rough gravel, and then, by pouring water amongst that rubble, you may have moist heat at command. By thus covering your pipes, you may also dispense with the expense of a slate covering over the chamber. From nine to twelve inches of rough, hard stuff over the pipes will be sufficient. If with only two pipes, they will require to be four-inch ones. These will be quite sufficient, if you carry your flue through the back wall, as that will give you a dry heat. If you did not have the flue, and yet wanted fruit all winter, you would be safer with two three-inch pipes for bottom-heat, and two for top-heat. You would see the mode of doing this the other week. The expense of pipes and boilers was given last year; that will greatly depend upon the distance; the smallest boiler, costing about £2 10s., would be sufficient. Lights will depend on the glass; about 1s. per foot would be a fair price; but you would see advertisements. Altogether, if not objected to, we would have pipes for top, and others for bottom-heat, to turn off and on at pleasure. We have no doubt, however, that the plan in No. 259 will answer admirably; but your house with the hipped roof will be much larger in proportion for your two pipes than that house is with four; the heating power would be as two to four; the space to be heated more than two to three. If expense is no object, you cannot keep too close to the mode in No. 259.

SCALE ON FRUIT-TREES (Ibid).—We have tried water almost boiling for this, and also a mixture of oil and grease, but both, though killing the scale, injured the trees. We have seen a mixture of lime, soot, and clay, tried with good effect. The insects were smothered, and the mixture dropped off before the bark was injured.

INDIAN-RUBBER PLANT—FICUS ELASTICUS (Peckham).—We fear your plant has been kept too cold, and, perhaps, in these circumstances, too wet. Try a sharp knife, and make an incision in a fair-sized shoot. If no white juice comes, you may almost despair; if that exudes, keep the plant in the warmest part of the greenhouse, if you have no better place; sponge the shoots on a sunny day, but give very little water to the roots until the buds begin to swell. Let the water used for syringing, and also for watering the roots, be warm, say 75° to 80°. It ought to be all right if you gave it from 50° to 60° during winter. Most likely the frost has had access. If there is healthy juice in it, it will break again. We require an address from writers and critics; but enquiries may, or may not be so accompanied.

HEN-FEATHERED SILVER-PENCILLED HAMBURG COCK.—E. A. asks:—"Whether a Hen-feathered Silver-pencilled Hamburg Cock is an acknowledged variety?" If by "variety" is meant any permanence of this peculiar feature in the progeny, the answer must be in the negative. Such birds are occasionally seen, but we cannot conceive how they could be thought desirable in the Pencilled Hamburgs, although the more perfect development of the spangle usually consequent on this peculiarity might be regarded as some compensation in a spangled pen, for the absence of the very characteristic sickle tail that distinguishes the Hamburg family.—W.

TREE CARNATIONS (Mary).—You will be quite right to take shoots off your tree Carnations, for cuttings, early in the spring; and where you take them from leave only one or two joints from the old centre, so that the next growth may come without being on long legs; half the Carnations trees are soon spoiled for want of pruning in time. Whether the shoots so cut at the beginning of March will make new shoots so strong as to flower next summer is another question. If the tree is in very good health, is strong, and has good roots, these new shoots will be sure to flower after the middle of July.

TURF COUNTRY (Ibid).—How lucky you are to have turf instead of coal, if your turf is that kind of hard, black peat, which they cut in the form of bricks. When that kind of earth is tried in a loose heap, and some of it is run through a rough sieve, and kept dry in a shed, it is the best thing in this world to keep other things from rotting or moulding, and, therefore, the best thing to plunge pot plants in, either in a pit or frame; a little water will not hurt it much, but the drier it is kept the better. The keeping qualities of your stock of *Pelargoniums* is as follows:—1. Punch; 2. Compactum; 3. Commander-in-Chief; 4. Cerise; 5. Tom Thumb; 6. Unique; 7. White Ivy-leaf; 8. Mangle's Variegated; and 9. Golden Chain; all except 9 will do in a dry, cold pit, without any fire heat, and 9 is a sociable kitchen-window plant, hot and dry;—make cuttings of every bit of it as soon now as your bed is ready.

FLOWER-GARDEN (Rev. E. H. C.).—Your geometric garden is exceedingly well planted. When we saw No. 1 to be with *Delphinium sinense*, we handed the letter to a lady who happened to be in the room, and read off the colours of all your beds from the plan itself, and we only missed in No. 11.—No. 10 requires to be mixed, to agree with 11, and also not to disagree with 13, the planting would then be perfect, according to the prevailing taste. If we were quite sure of the boundary line, and how the walks to and from 8 and 9 terminate, we would engrave this plan for the sake of the planting.

FEEDING BEES (A Tyro).—Go on to supply barley-sugar until your bees refuse to eat it, which will, in all probability, be in April. If No. 2 has a good supply of barley-sugar always in store, say three or four sticks, at least, there is very little cause to fear of their being carried through the winter, and making a good stock for next year, but all depends upon their having food and their taking it. Buy *Payne's Bee-Keeper's Guide*.

CUCUMBERS (W. W.).—These, not ripening their fruit in your greenhouse last summer, were probably supplied with something wrong at the root; either the soil or the watering were deficient. It is impossible to say, positively, where the error was unless we knew what you did.

DEVON AND CORNWALL POULTRY SHOW.—B. J. Ford, Esq., of Ide, near Exeter, took a first prize for Partridge-coloured Shanghaes, and not a second, as stated in our report.

GOLDEN-PENCILLED HAMBURGERS (An Anxious Enquirer).—Your hens not laying this year, though so prolific last year, indicates that they are probably too fat. Give them less nutritive food for a few weeks.

SHANGHAES NOT LAYING (Darlington).—Your pullets are certainly too well fed. Stint them to a quarter-of-a-pint of barleymeal and bran mixed, and a quarter-of-a-pint of wheat or barley a-head per day. The symptoms you mention, at present are those of a severe cold. Give the invalids a desert spoonful of castor oil, and keep them in a dry, sheltered shed for a few days.

CAYENNE PEPPER IN PODS (T.H.).—Either the foreign or the English will do for Poultry. Such stimulants are never given to our fowls.

EMIGRATION.—H. C. says:—"A party, anxious to emigrate to Australia as an agriculturist, wishes to know what seeds he should take, both agricultural and horticultural? Which part of the country is best adapted for agricultural pursuits? What breeds of Cattle, Poultry, and Sheep would be best to take? (Query—Should any be taken; or purchased when there?) How is ground obtained there, by purchase? or are there parts free to all who like to clear the land and cultivate it? What kind of field and garden implements should be taken? What books might be read with advantage on the subject?"

INVALID FOWLS (M.).—We can only suggest that they need more nourishing food, such as wheat and Indian-meal; but it is quite impossible for us to give an opinion without knowing how or where they are kept.

ORCHID CULTURE (W.W.).—We do not know whether Mr. Appleby intends to make arrangements for publishing these in a separate form.

EGGS FROM LATE PULLETS (S. T.).—We should have no objection to rear chickens from eggs laid by pullets hatched last May, especially as they weigh nearly 6lbs. each. We never sit a hen after the beginning of June, nor earlier than the middle of February.

PLASTER FOR WOUNDED PLANTS (H. H., Jun.).—The cut surfaces of Rose-Stocks, and similar wounds, do not require any other covering than a little thick paint. Pressure is injurious to such wounds.

AWNING FOR ROSES (J. F. T.).—Your friend's Roses in America, which were scorched up last summer, though grown "under the shade of trees," probably suffered on account of being so situated. The weather for Roses can scarcely be too hot in this country, if the soil is rich and well supplied with moisture. The roots of the trees beneath which they were grown probably robbed the Roses of the nutriment which would have enabled them to withstand the heat. An awning would prolong the duration of the bloom, but manure, and water to the roots, would best carry them through great drought. The seeds you mention may be obtained in England as good as in France.

IODINE FOR THE POTATO DISEASE (M. S.).—We know nothing upon this subject. There is some iodine in all Sea-weed. The grass beneath the Cedars dies from want of light.

SPANISH COCKEREL (A. B. C.).—Write to Capt. Hornby, Knowsley Cottage, Prescott, Lancashire.

SUDDEN DEATH OF POULTRY (W. E.).—The cock forwarded to Mr. Tegetmeier having been sent to Tottenham, did not reach him. The bird, doubtless, died of apoplexy; a description of the symptoms, and treatment of which, will be found in the present number.

Advertisements.

SEEDS DIRECT FROM THE GROWERS,

(Carriage Free) the most effectual means to prevent disappointment. SUTTON'S CATALOGUE for 1854 is just published, and will be sent post-free, on receipt of one postage stamp.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR

IMPROVING OLD PASTURES.—Many Old Upland Pastures, Parks, and Meadows, are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are sown early in the season, the improvement in the Pasture will be very considerable, and at a small expense.

The following is similar to many other letters received from former purchasers:—

From D. T. Cunynghame, Esq., Wellesbourne, Warwick, Nov. 1852. "The meadows that were renovated with your Seeds are looking very well. I cut nearly 2 tons of hay to the acre, and three years ago the same land hardly produced half-a-ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 lbs. to 12 lbs. per acre. Price 1s. per lb., Carriage Free.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks. N.B.—We have a very fine Stock of Mangold Wurtzel and Carrot Seed, and other Agricultural Seeds.

LONDON: Printed by HARRY WOOLDRIDGE, Winchester High-street, in the Parish of Saint Mary Kalender; and Published by WILLIAM SOMERVILLE ORR, of Church Hill, Walthamstow, in the County of Essex, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—February 16th, 1854.

NEW SEEDS—GROWTH of 1853.—RENDLE'S
COLLECTION OF GARDEN SEEDS, FOR ONE YEAR, will be sent out as usual by the Subscribers.

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 months.
No. 1.—A complete Collection, to supply a large garden for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops; 10 quarts of Beans, £ s. d. and full quantities of all other kinds of vegetable seeds . . . 3 0 0
For the detailed quantities contained in the No. 1 Collection, see back page *Gardeners' Chronicle*, Jan. 7, 1851.

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WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

ESTABLISHED 1786.

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CULTIVATED FOR THE REARING OF THE SILK WORM, at 10s, 15s, and 20s per hundred. Cuttings, 5s ditto.

SILK-WORMS EGGS, 1s 6d per thousand.

Post-office Orders or Stamps, on receipt, duly attended to. Address, Mr. J. R. EVANS, 8, Cork Street, Bond Street, London; or Mr. G. BALCHIN, Spring Place, Godalming, Surrey.

POLYANTHUS SEED.—To the lovers of that
beautiful early spring flower, the POLYANTHUS.—JAMES WOODS has again to offer a quantity of Polyanthus seed, which he has this year saved with more than ordinary care from about eighty named and good faced flowers, which he can recommend with confidence, with directions for sowing. Price 1s per packet, or sent free on receipt of thirteen postage stamps.

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P.S.—Plants of Polyanthuses will be sent out in April, at exceedingly low prices, with blooms on each plant, as the stock must be reduced, as the land is wanted for railroad purposes.

CHOICE SEEDS FOR PRESENT SOWING.—

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VERBENA, from 70 kinds, including the new continental sorts, 6d.

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Descriptive Catalogues may be had by enclosing one postage stamp.

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RANUNCULUSES: 100 splendid named sorts, 40s to 4 0 0
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One-year-old plants, strong, 5s each. A few two-years-old, very strong, for sale.

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January 13, 1854.

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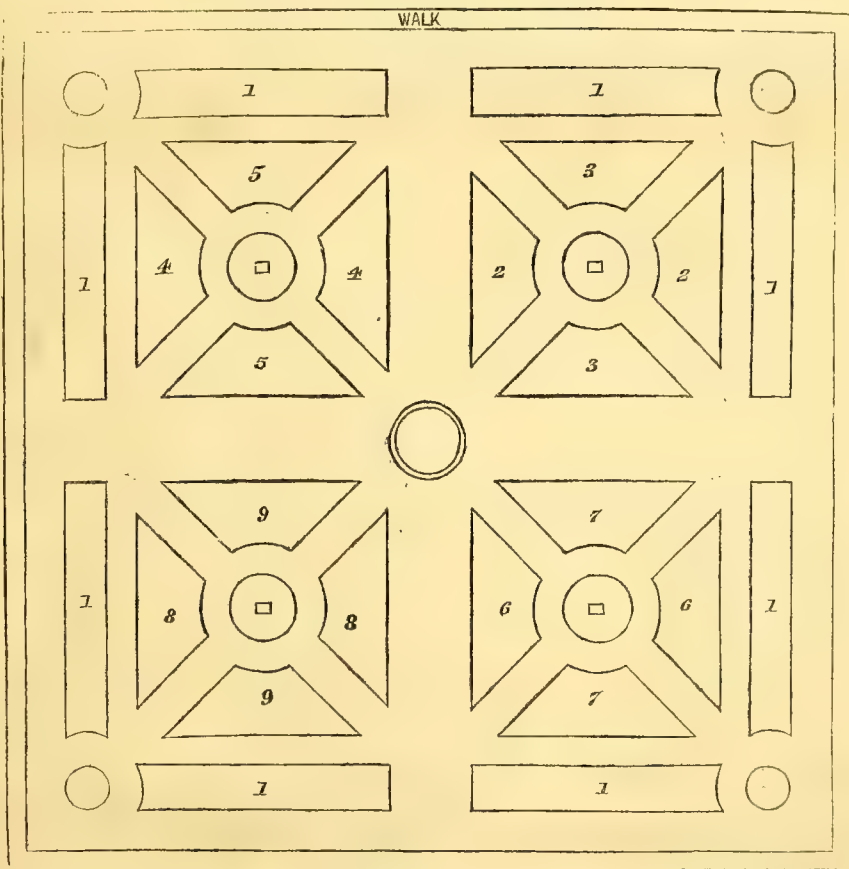
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WEEKLY CALENDAR.

		WEATHER NEAR LONDON IN 1853.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
M D	D W	FEB. 23—MARCH 1, 1854.	Barometer.	Thermo.	Wind.	Rain in Inches.						
23	Th	Small Brindle; oaks.	29.629—29.540	43—25	W.	02	1 a 7	27 a 5	5 10	26	13 38	54
24	F	St. Matthias.	29.754—29.305	40—32	N.W.	09	58 a 6	29	6 4	27	13 30	55
25	S	Clouded head; oaks.	29.732—29.456	40—29	N.	15	56	31	6 44	28	13 20	56
26	SUN	SHROVE SUNDAY.	29.182—29.086	44—30	W.	09	54	32	7 12	29	13 10	57
27	M		29.752—29.441	39—22	N.	—	52	34	sets.	30	13 9	58
28	Tu	SHROVE TUESDAY.	29.900—29.809	40—24	N.W.	—	50	36	7 a 15	1	12 49	59
1	W	LENT BEGINS. ASH WEDNESDAY.	29.696—29.653	39—24	S.W.	27	46	40	8 32	2	12 37	60

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 47.7° and 34.2° respectively. The greatest heat, 64°, occurred on the 28th in 1846; and the lowest cold, 18°, on the 23rd in 1852. During the period 108 days were fine, and on 81 rain fell.

FLOWER-GARDEN PLAN.—No. 12.



This Plan is a duplicate of Plan No. 11, at page 213, and all that I said about that plan refers equally to this one. There were two blocks of beds in No. 11, and there are four blocks of the same beds in this plan. That is on the principle on which Sir Joseph Paxton proceeded with the Crystal Palace. First of all, he hit on making one complete square or block of a house for Water Lilies, for the Duke of Devonshire; then it struck him, how easy it would be to extend this block system, east and west, or north and south, or in all directions. All after that was but a question of money. The circular part, called the transepts, was merely to break the uniformity of a great many blocks when put together. That curved portion, or rather the curve system, was an old way of hothouse building with him, and with others before him. Regularity was, and is, the grand secret in the Crystal Palace, and from it to the one-bed system on the little piece of grass in front of the casement window, regularity evinces taste and adaptation of means to an end. If you had room for only one flower-bed, the situation

of that one bed ought to show that the owner of it was alive to the beauty of regularity. If you have room for one bed only, that bed must not be placed at one of the corners, or at one of the sides of your small piece of ground, and for this reason, that there is not a second bed to match it at the other corner, or side, so as to make the space equally divided, or regular. In the centre, however, this bed would be quite regular, because we cannot put two beds in the centre of a small piece of grass, and each of them be in the middle; therefore, single beds, or single blocks of similar beds, ought to stand in the centre of confined places; but, if more than one block is to be made, the very middle of the space must be avoided as a plague spot, for the reason just given. There is an old story, in Scotland, about two daft bodies happening to meet of an evening at a farm house, and a bed for them was made in the barn for the night; but even pooridiots are not always harmless, as people say, for these two disputed about who should occupy the middle of the bed;

they fought, too, and also had torn the sheets, blankets, and all into two halves, and each of them took his half, and made a bed for himself. That was not a whit more daft than having the only two flower-beds on the centre of a small piece of grass, or a single bed, anywhere but in the middle.

The next step is, when there is room for only three beds, how are we to dispose of them? Nothing is more easy; if they had to stand as close as three in a bed, one of them would, and should, be in the middle, and the other two opposite each other; but, as pieces of ground that would admit of this disposition are very rare to be met with, we seldom see three beds anywhere, or, if so, only as a breach on regularity.

A four-sided piece of ground, if ever so small, will admit of four beds, or of five beds, according to the taste of the owner; and the two ways would be quite regular; one bed in the very centre, and one in each of the other. Here we have arrived at our aristocratic blocks, each of them are of five beds, a centre one and two side ones, the rest of the beds are mere accompaniments, and might be of half-a-dozen shapes, and still be in pairs, or double pairs, and so on.

It is not the shape of a bed, or a block of beds, that one ought to be so particular about, for there never was, and never shall be, a set rule for the shape of flower-beds. It is the disposal of the beds themselves, and the way the colours will tell best, that we have, all of us, to learn so much yet. Then we gardeners know very well, from our practice, that it is quite impossible to dispose of the colours to the best advantage unless the beds are so placed as to suit the extent of such and such a colour, in such and such places. All the world are not yet agreed as to the best disposal of the colours in flowers, but if they did so agree, without the beds and sizes of beds were laid down something like in due proportion to the colours and the heights of the plants that are fit to plant in a fine garden, the agreement would be of little practical value. Those who take their notions of the value or effect of colours from what the painters say of them, may or may not be all wrong, according to the knowledge of the said painter in flower colours. Even cut flowers may lead the best painter in the world astray as to the effect they would produce with the leaves, style of growth, and shade of the living plants. Practice alone will ever make a good arranger of a flower-garden.

D. BEATON.

THE still unascertained fate of Sir John Franklin and his companions, and the exploring expeditions still employed in endeavouring to ascertain more information concerning their route, and whereabouts, casts more even than the usual amount of interest over the Arctic Regions. We were glad, therefore, to avail ourselves of a recent opportunity of obtaining some authentic particulars of those latitudes, which are associated in our minds from childhood with no other ideas than endless snow and ice, and with days and nights alternately of months duration.

We especially sought for an account of the plants of that dreary region, and though we failed in attaining anything original, yet we were referred to a work from which we have derived what we required, and much more that is amusing and useful.

The publication referred to, is Dr. Sutherland's "Journal of a Voyage to Baffin's Bay and Barrow's Straits," in the years 1850 and 1851.

From this we learn that the land plants of the Arctic circle, though specimens of them, all in a growing state, can be contained in a box two feet square, yet amount in number to forty-five ascertained species. They are as follows:—

Ranunculus frigidus Willd. Assistance Bay.
Papaver nudicaule L. Assistance Bay.
Cochlearia fenestralis Br. Assistance Bay.
Parrya arctica Br. Assistance Bay.
Cardamine bellidifolia De. Assistance Bay.
Braya glabella Richardson. Assistance Bay.
Draba rupestris Br. Assistance Bay.
 " *glacialis Adams, var.* Assistance Bay.
 " *alpina L.* Assistance Bay.
Arenaria Rossii Br. Assistance Bay.
 " *rubella Hook.* Assistance Bay.
Cerastium alpinum L. var. glabatum. Assistance Bay.
Stellaria longipes Goldie. Northumberland Inlet.*
Lychnis apetala L. Assistance Bay.
Potentilla nana Lehm. Berry Island and other islands in Davis' Straits.
Dryas integrifolia L. Assistance Bay, Berry Island, and adjacent islands.
Cruciferae?
Epilobium latifolium L. Northumberland Inlet.

* Known also by the name Hogarth Sound, which was given by Captain Parry, its original discoverer.

Saxifraga pauciflora? Stev. Bushnan Island.
 " *oppositifolia L.* Assistance Bay, Berry Island.
 " *nivalis L.* Assistance Bay.
 " *cernua L.* Northumberland Inlet.
 " *caespitosa L.* Assistance Bay.
 " *flagellaris Willd.* Assistance Bay.
 " *tricuspidata De.* Northumberland Inlet.
 " *hirculus De.* Northumberland Inlet.
Pyrola rotundifolia L. Northumberland Inlet.
Cassiope tetragona Don. Bushnan Island.
Vaccinium Vitis Idæa L. Bushnan Island.
Arctostaphylos alpina Spr. Northumberland Inlet.
Polygonum viviparum L. Assistance Bay.
Oxyria reniformis L. Assistance Bay.
Empetrum nigrum L. Northumberland Inlet.
Vaccinium uliginosum L. Northumberland Inlet.
Salix cordifolia Parsh. Assistance Bay.
 " *arctica Pall.* Assistance Bay.
Juncus biglumis L. Assistance Bay.
Carex Hepburnii Boott. Berry Island.
Luzula hyperborea Br. Berry Island, Davis' Straits.
Eriophorum polystachyum L. Assistance Bay.
Phippsia monandra Trin. Assistance Bay.
Alopecurus alpinus Sm. Bushnan Island.
Poa cenisia All. Bushnan Island, Assistance Bay.
Hierochloa alpina Wahl. Bushnan Island.
Luzula hyperborea Br. Bushnan Island.
Woodsia glabella Br. Berry Island and other islands in Davis' Straits.

Of some of these plants we find the following particulars scattered through the volumes.

On the 29th of May, 1850, in the vicinity of Dark Head, Dr. Sutherland says:—

"Vegetation, as yet, had hardly made any advance, although snow-buntings and ptarmigan (*Tetrao saliceti*, and *Tetrao rupestris*) could be seen occasionally. The ptarmigan feeds upon the willow tops, and the snow-bunting upon the berries of the *Empetrum nigrum*, which are very abundant. I landed six years ago on the rugged coast, south of the Black River, in the bottom of South-east Bay, and found these berries so numerous in the month of May, that whole basketsful could have been collected; and, although they have been covered with snow during the whole winter and spring, and were so far liable to change of temperature, they did not seem to have suffered much from it, for they retained their sweet taste, and other properties peculiar to them in a fresh condition. It is very probable that the temperature had rarely been above the freezing point; otherwise, decomposition of their juices would soon have rendered them quite tasteless.

"A plant (*Pyrola media?*), known by the name 'bukoblatther' among the Danes, which is very abundant, is also very highly prized as an antiscorbutic; and when they have any fears of the approach of scurvy, it is collected in

basketsful, and a decoction or infusion made from it comes into general use."

Writing at Melville Bay, in the middle of August, Dr. Sutherland observes:—

"Vegetation was very far advanced. In some parts, especially the southern slopes, it was rather luxuriant. The *Andromeda tetragona* was beginning to fade; a specimen or two in bloom was obtained in a shaded spot. There was a whole array of Arctic plants. The well-known yellow Arctic poppy (*Papaver nudicaule*), one or two varieties of creeping willows, several grasses ten or twelve inches in length, the *Alopecurus Alpinus*, and hosts of Cryptogamic forms could be recognised."

Gardening was not altogether neglected on board the ships even during their winter sojourn.

"Water-cresses and mustard were reared with great care, and they were very highly prized. Several stems were examined, and found to be four to five inches in length. The proportion of water which the young plants contained was so great, that one could hardly expect to derive great benefit from a few ounces of them every week. A portion was exposed to a temperature of 90° to 100°, until it ceased to lose weight by further exposure; the remainder, containing all the antiscorbutic and nutritious properties of the plant, amounted to 6·5 per cent., which was not nearly one-half the weight of the seed that had been used: the 93·5 which escaped, unfortunately happened to be water. I tried the same experiment several times with both mustard and cress, so that I might, if possible, receive favourable impressions with respect to the gardening; but the results were invariably the same, for the water which escaped by evaporation often exceeded 93 per cent. I could hardly credit that a plant grown in the dark, and destitute of every trace of green, containing such a large proportion of water, and almost insipid with the exception of the acrid principles of the seed and its essential oil, could possess virtues worthy of the slightest confidence. The young plants were less acrid than the seed, and the essential oil had almost all disappeared; their weight, too, was about half the weight of the seeds which produced them. Notwithstanding, its cultivation was encouraged and continued zealously, and the amusement and recreation it afforded proved of great value to those who devoted their attention to that department of horticulture."

"The Expedition was most munificently supplied with preserved vegetables, which still remained as fresh as when they were put into the tins. The allowance of them that was served out proved most ample at all times, and no one seemed to have any 'longing' for succulent vegetable food. The time, however, for this 'longing' was only approaching; for, up to this time, we had the use of fresh potatoes, which, be it observed, grew in 1849, passed through a summer and a winter in the Arctic Regions, in addition to one winter in the climate that produced them, and still retained their nutritious properties unchanged. They always deserved and got the preference, and now, that we had just used the last of them at dinner, we should have felt glad to have transferred the high esteem that had attached to them in the fresh state, to the patent preserved potato of Edwards; this, however, we could not do, in the presence of succulent carrots and turnips. The fresh potatoes sometimes became frozen, and, if they were permitted to thaw without being used immediately, fermentation commenced and in a very short time they became quite sweet: if, however, they were put into the vessel to be boiled, without first being thawed in cold water, they invariably became quite tough, so that they might be boiled into shreds, without removing the fibrous structure which they seemed to have assumed. A remark was made to the cabin steward, on one occasion, that the potatoes were not sufficiently boiled; his reply was, that they had been kept in boiling water for three hours. This reminded us of what Mr. Darwin observed in the lofty Andes, when his guides were blaming the new pot for not boiling the potatoes; the true cause being the lowering of the boiling point of water, from the immense height which they had attained, but of this they had no conception."

In our last, we gave it as our opinion that, in all probability, the *Frame Peas* will, in time, be discontinued as garden varieties; and that they will ultimately occupy much the same position that the *Charlton* does now. Every year confirms us more and more in that opinion, as we find new varieties introduced, rivalling them in earliness, and far surpassing them in excellence. Those which we are now about to describe sufficiently illustrate this fact; for, while they come into use almost, if not quite, as soon as the *Frames*, they are possessed of that peculiarly tender and rich flavour which is characteristic of the *Marrows*. Seeing, therefore, that we can have a sufficient supply furnished by those earliest varieties, such as *Sangster's Number One*, and *Warner's Emperor*, till the rich marrowy crops of *Nonpareil*, *Ringwood*, and *Paradise* are ready, of what use are the dry and mealy *Frames*, which come in at the same time?

FAIRBEARD'S NONPAREIL.

I am not very well prepared with a report of the comparative earliness of this variety, as I did not receive it till some time after the others were sown, and I did not meet with it in the sample grounds of those members of the trade who so kindly afforded me that advantage; I consequently had no opportunity of comparing it with others. But it is said to be earlier than *Champion of England*, and as early as the *Frames*, and, from what I have seen of it, I have no reason to doubt this statement. Of this I am quite certain; it is a most valuable pea, and belongs to the class of sweet, wrinkled varieties, known as *Knight's Marrows*—in fact, a *Knight's Marrow* as early as the *Frames*!

The plant produces a branching stem, from three-and-a-half to four feet high, with a habit of growth and vigour similar to the *Double Blossomed Frame*. The pods are from two-inches-and-three-quarters to three-inches-and-a-quarter long, half an-inch broad, somewhat curved, and terminated abruptly at the end. They are very full and plump, but do not become thick-backed and fleshy as they ripen, as the *Frames* do; and they contain from six to eight peas, which are close together, and very much compressed, being nine-twentieths-of-an-inch long, seven-twentieths broad, and six-twentieths thick; and of that very sweet flavour which is peculiar to the *Knight's Marrows*. The ripe seed is small and wrinkled, and of the same colour as the other white wrinkled peas.

This variety was raised by Mr. William Fairbeard, of Green Street, near Sittingbourne, who also raised the *Champion of England*; and it may now be obtained through any respectable seedsman.



RINGWOOD MARROW.

Synonymes:—*Beck's Marrow*: *Flanagan's Pea*.

This is a very valuable pea, and another rival of the *Frames*. It produces a very large, well-filled pod, and is a most abundant bearer; but it has a peculiarity, which, by some, is considered an objection, from the pod being white instead of green, and presenting, when only fully grown, the appearance of over-maturity. This objection, however, is chiefly taken by those who grow it for markets, and who find a difficulty in convincing their customers, that notwithstanding the pod being white it is still in its highest perfection. So far from being soon out of season, the *Ringwood Marrow* retains its tender and marrowy character longer than many other varieties; and I trust, from the statement I have now made, and the extensive publicity which it will have, that any prejudice which may exist regarding the character of this excellent variety will be as generally dispelled. As regards earliness, I found it not more than two days behind the *Frames*; and, in every other respect, far superior to them.

Plant with a moderately vigorous habit of growth, producing a stem which is three-and-a-half to four feet high, and always simple, except in wet seasons, when it makes a second growth by throwing out shoots from near the ground. The lowest pods are within about a foot of the ground, and are produced at every joint, even to the extremity, the whole number on each plant being from ten to twelve. The pods are single and in pairs, in about equal proportions, from three to three-and-a-half-inches long, and six-tenths-of-an-inch wide, slightly curved and waved on the upper margin, and terminated rather abruptly at the point. As they ripen, they become thick and fleshy, with a rough, pitted, and shrivelled surface. They contain from six to seven large peas, which are roundish and not compressed, about nine-tenths-of-an-inch long, seven-tenths wide, and the same in thickness. The ripe seed is white.

The *Ringwood Marrow* was sown on the 5th of April, bloomed on the 10th of June, and was ready to be gathered on the 9th of July. It is far superior to *Shilling's Grotto*, both in earliness and filling.

There is a variety called *LINCOLN GREEN*, which possesses all the properties of the *Ringwood Marrow*, without the objectionable white pod, at least, so I am informed, but I cannot speak of it from my own experience, for the sample which I grew was late sown, and suffered so much by the attacks of the "*Dolphin*" (*Aphis*), that it did not come to maturity. T. H.

(To be continued.)

HAVING given prominence to the statement by one correspondent, A. B. (page 354), of a mode of making cheap bread, which that correspondent declares she had "tried," and shewn the results to her "own labourers," we feel bound to give equal prominence to the following counter-statement, and shall be glad if A. B. can justify what she communicated.

With respect to the addition of Potatoes to flour made into bread, they render it less cake-like than Rice makes it, but, to us, it appears quite as palatable, and causes the bread to continue moist for a much longer time.

"I take the liberty of adverting to the receipt for cheap bread, introduced into the leader of your journal of the 9th instant, where you have been induced, upon the statement of a correspondent, to give further publicity to an error which had previously gone the round of the provincial, and many of the metropolitan newspapers. The fact of its being an error, you may, in one moment, convince yourself, by adding together the weight of all the ingredients your correspondent directs to be used, and you will at once see the impossibility of the result stated, unless we are again living in the age of miracles, and to those having faith an increase in the quantity of their Staff of Life (during the process of baking) is vouchsafed. If the bread made with 1½ lb. of rice increased to the weight quoted, it could only be, of course, by the absorption of a much larger quantity of water than is allowed in the receipt given, and from which there would be no nourishment derived; but it is not even so, for I have repeatedly tried it, most carefully weighing every ingredient before mixing, afterwards the dough, and then the bread, and the result has always been that the increase in weight, over and above what the 14 lbs. of flour would have yielded, has been but a ½ lb. more than the actual weight of the rice added, viz., 2 lbs., the rice added having been 1½ lbs. The bread thus made is very nice eating, but to reduce the rice to pulp is a great deal of trouble, occupies a great deal of time, and requires a considerable amount of firing; these things taken into consideration, making the bread dearer, instead of cheaper than wheat-flour bread.

"I have also tried the addition of Potatoes, and find the weight of the bread increased only to the weight of potatoes added; and certainly not so nice as by the addition of rice. 14 lbs. of good wheat flour will absorb 7½ lbs. of water, which, with ½ lb. of yeast, makes 22 lbs. of dough, losing exactly 2 lbs. in baking; therefore, yielding 20 lbs. of bread, and making an increase of 6 lbs. (by the absorption and retention of water) upon the 14 lbs. of flour used, which is a much greater increase than can be obtained by employing any other ingredient, besides being purer, and far more nourishing, therefore cheaper, and in every respect the most desirable. If you add together the weight of your correspondent's ingredients, viz.,

Flour.....	14 lbs.
Rice	1½
Three quarts of water..	7½
Sufficient yeast.....	½

23½ lbs. of dough is the result. Allowing this to lose only 2 lbs. by baking (viz., the same as the 14 lbs. of flour dough), it will only yield 21½ lbs. of bread. Now, there is no disputing figures, therefore I repeat that it is utterly impossible that 23½ lbs. of materials can, by baking, (*without Divine interposition*), become converted into 30 lbs. of bread; and the publication of such statements are sure to produce either disappointment (more especially to the poor, who are not likely to enter philosophically into the subject, and discover the fallacy of the statement by calculation), or distrust, by creating doubts of the baker's honesty, to whose oven the bread may be sent.

"To spare you the trouble of answering my query (addressed to you by note last week), concerning Messrs. Beck and Henderson's whereabouts, I write to inform you, that, after much trouble, I this day found their house of business,

but upon making application for some seed of the *Pea*, *Beck's Gem*, you spoke so highly of, in your Journal of the 2nd instant, I was informed that they had none except for their regular customers. Will you kindly inform your readers of this fact, and thereby spare many a fruitless journey.

"JOHN DENNY, *Stoke Newington*."

POTATO CULTURE—SUGGESTIONS.

THE present high price of this universal favourite, notwithstanding the great deterioration in quality, as compared with the Potatoes of a score years since, proves that the public still cling to it with as much tenacity as ever; although such immense losses have accrued to cultivators as would have driven any other root out of cultivation. We may, therefore, expect an enormous breadth under culture again this year; and I take it for granted, that practical hints from observant and experienced cultivators will be well received by our numerous readers.

A few years since, soon after the disease broke out, the press teemed with nostrums, recipes, and advice—the latter certainly of the most dogmatical character; and the public, fairly swamped with mere opinions, at last turned from the subject with disgust. The great misfortune was, that the bulk of all this gratuitous advice was given by persons whose chief qualification for the matter was an extreme partiality for this root, especially when accompanied by good old English roast beef. As our country farmers say, there was too much of the "fire-side ploughing;" and culture of this kind is not always of the most profitable. I take it for granted, that after all the visionary speculations that have been offered as the ground-work for future operations, the best way to deal with the question is to take warning from past facts, and to leave hypothesis to the mere experimenter.

One great fact, and that, on the face of the question, is this: that luxuriance of growth, so far from being an alleviator, is a promoter of the disease. This is so well established, that I will venture to affirm ninety out of a hundred of *really experienced and practical men* will readily assent to it. The next point established is, that late growth offers no chance of amelioration, but directly the reverse. Here, again, I have no fear of being left in a minority as to the opinion. These, then, are, I think, the two chief features of the question on which, for the present, to base our practice; other collateral points there are to which I will just advert, but they hold a decidedly subordinate position. Such being taken for granted, we may as well see for a moment how the two admitted evils are produced.

To say that manurial matters produce luxuriance is a mere truism—every schoolboy knows that; but, does nothing else contribute to it? Here is the rub! A man, holding opinions that rich manures prove prejudicial, may plant a plot in an old kitchen-garden, and fancy, that because he has added no *fresh manure* he cannot have erred in that respect; but this is most fallacious, and thousands annually thus mistake their course. I have known many a plot in a kitchen-garden much richer after a scouring crop, than the manured land of the farmer; at least, if not in manures, in the remains of former applications, or in that dark material termed humus, and which we gardeners find highly contributory to rampant growth.

Setting aside the question of manures for a moment—Is there nothing in cultural operations having a tendency to produce the undesirable condition of a gross plant?—Yes; deep digging; and this is unluckily favourable to late as well as rampant growths. Those who have long known me as a staunch advocate for deep digging, trenching, and such-like high cultural

operations, may think, in an off-hand way, that I "blow hot and cold."—Not so, however. When deep digging, manuring, &c., are found to be inimical to the welfare of any given crop, I, for one, am content to throw them overboard, although things of immense importance in themselves; in order to be better able to buffet the waves and avoid shoals and rocks. But I will quote a case which occurred with me last year. Having a desire to grow a liberal quantity of the *Ash-leaved Kidney*, SPECIALLY FOR SEED, an annual practice with me, I selected one of the poorest plots in the kitchen-garden; the previous crop had been the Red Beet, for which ground had been trenched; in doing so, about three inches of subsoil had been brought up, a usual practice with me. The ground was unmanured for the Beet previous, and, of course, unmanured for the Kidney; and, I will now add, UNDIG!

The ground was marked out in beds of about three to four feet—what our Cheshire farmers call "butts"—a corruption, doubtless, of "bouts." The Kidneys were set on the solid ground, exceedingly thick, in order to make them small and genteel; for we old Kidney Potato growers know full well that too high culture forces the Kidney to "run out," that is to say, to lose the handsome form for which it is in part so much esteemed, and to become dumpy and irregular.

The Kidneys, planted whole, of course, were about six inches square apart, every little fellow selected for shape, and set on end; they then had a slight dressing of old manure, delivered by hand from a basket, strewed over them; and next a coating of pulverised soil, about two inches in thickness. Nothing more was done until they were just bursting through the soil, with a crop of young weeds, when another two inches of pulverised soil was spread over them, thus "killing two birds, &c." This latter is the ordinary "butt culture" practice in Cheshire.

I have now to add, that the crop was enormous for the space occupied, I think nearly double that of some treated in higher style, and, as I expected, the majority of them were adopted for seed to plant whole, for it is nonsense to plant Kidneys whole nearly as big as a flounder, with the idea of having a superior crop; this is, indeed, a waste.

It may now be naturally expected that I should show how this deep digging may prove prejudicial to Potatoes in their present position; but in doing so, I must beg to qualify such remarks by observing, that I by no means affirm that deep digging is to be avoided in all cases. I am simply speaking of old tilled or dug soils, rich in the remains of former manures. Deep digging, of course, encourages deep rooting; deep roots are often at work when shallow ones are idle; and the system of the plant is, of course, thereby kept distended with invigorating fluids, which, as a matter of course, not only render the plant more gross, but, from the mere annual up to the huge Oak, through the various intermediate grades, sustains a lively circulation for a longer and later period in defiance of temporary droughts and other vicissitudes to which plants with mere surface fibres were ever liable.

Everybody knows, who has paid close attention to the character of the disease under varying conditions, that it assumes at least two distinct phases after a certain period; and here I would not defer the question to those possessing small suburban gardens, but to those whose lot is cast amongst thousands of broad acres, and whose locality is known as a Potato district. In such quarters, I have seen, repeatedly, extensive fields adjoining each other, and of precisely a similar staple of soil, the one covered with a moist and rotten blackness, the other dried up to mere sticks. And how is this? Simply because the one field produced a gross, or highly cultivated plant, the other a lean one, through the mere

inability, perhaps, of the farmer to provide as much manure for it as he would desire; and thus through a comparative poverty forced to befriend himself.

It will, doubtless, be remembered, that some weeks since I pointed to the immense success that a neighbour of mine has had who has grown annually a score or two acres, and that, too, on a tract of land that everybody despised, as it were, previously; it being what is termed "ploughed out;" that is to say, so hard-worked and ill-used as to require much handling to get it in temper again. I then stated, that as he kept no stock he was driven to the use of guano, and to this must be attributed, in the main, his success. And I here advise what I certainly shall practise, that where manure *must be used* it be very old, such as is calculated to spend its little remaining strength in a short period; indeed, if it were possible, I would prevent its being of any advantage to the plant after the beginning of July. With this view of things, I shall immediately prepare a compost to go in drills, or to be sown over beds just before covering the Potatoes. This compost will be composed of old, dry and powdery manure, much soot, and a little good guano, with perhaps a pinch of salt; and this, well mixed, I shall sow by hand from baskets. In the event of the soil being in tolerable heart, without manure at planting time, I shall, in the case of the beds or "butts" before described, add quick-lime to the same compost, and dress the surface of the bed or "butt" just as the Potatoe is breaking ground, and immediately soil it all over to prevent dissipation and to destroy weeds.

To make the young sprouts into a stout plant in a very short period after they break the ground, and that with such extra assistance as will desert them as soon as they are a good plant, is my policy; and the rest I leave to the atmosphere and the rains.

But mind, this by no means involves earlier planting than other folks; the planting question has nothing to do with it. Let people plant when they will, I hold it a maxim that Potatoes to be relied on for ordinary field or garden crops should not be allowed to expose their heads unprotected until the third week in May; but I would so manage them that they shall have done much work underground, like the mole, before they appear.

I would here caution the inexperienced against deep planting, especially for crops required early; but even later kinds love not to be buried deep. Let those who would prove this just try a few rows of early Potatoes side by side. Let them plant one lot about seven inches in depth, and the other about three, and I will engage that the latter will be ready for use nearly a fortnight before the deep-planted ones. Moreover, early crops are best without *after applications* of soil, if it can be dispensed with. I have known a frame of Potatoes retarded a fortnight or more by an ill-judged application of surface-dressing when they were six inches or more in height, and no wonder, either. Persons thus over officious do not consider, that in so doing they interpose a cool and fresh body, somewhat nonconducting, between the generally warmed medium the roots are in and the atmosphere, and that such interposition must lower the temperature where the roots are situate by perhaps five degrees; of this fact I am persuaded, having well proved it.

In taking leave of the Potato for a little while, I would impress on our readers the common-sense proceeding of procuring as good seed as possible. It is all very well to say, in despair,—“It matters little about seed; I have known corrupted seed produce as good a crop as the very best.” This, although a fact in a few solitary cases, is what I call a most unphilosophical and cowardly conclusion. What! because anomalies exist in this case, as, indeed, they beset most matters, shall the mind of man, in a fit of mere childish impatience, in the most

gross and undistinguishing manner, rush on an important conclusion?

Our Sir Isaac Newtons, our Dr. Johnsons, our Paleys, were not men of this metal; they were made of “sterner stuff.” As well might a cattle breeder forswear all right of pedigree through “blood,” because, forsooth, he made a first-rate “hit” from a most ordinary source. I doubt not, myself, that the Potato will one day be restored to us in its original strength; but bad seeding, bad breeding, and conceited modes of culture, based on no real principles, certainly do not offer the best chances of such a desirable consummation.

R. ERRINGTON.

TREES AND SHRUBS.

HOLLIES.

THERE are above a dozen of the Common Holly with green leaves, and above a score of Variegated Hollies. Some of the green kinds are named variously, from the size or shape, or from prickles or no prickles, from the thickness or thinness of the leaves, and also from the Holly-berries being yellow, black, or white—and out of these one might pick up six or seven very distinct sorts; but there is no right or regular system of names by which they can be asked for that I am aware of. It is the same with the Variegated Hollies—one must see them to make a selection of sorts. Silver, Golden, and Hedgehog Hollies give but a very faint idea of this class; and so do the best Nursery catalogues. Nothing short of seeing a good collection in the large nurseries can enable one to make a selection of such plants. When one is going to buy in earnest—even one of our best country gardeners—he would know more, and learn more, in one hour, going over a large nursery, when the plants are all in leaf, than he could by reading about new trees and shrubs for a whole week, if he had nothing else to do. Besides the varieties, there are several new Hollies, and old ones, too, that ought to be in every good collection.

AMERICAN HOLLY (*Ilex opaca*).—A beautiful, low tree, which is used all over North America as we do the common Holly. *Laxiflora* is only a variety of *Opaca*, according to Nuttall.

MINORCA HOLLY (*Ilex balearica*).—A very distinct kind, which comes nearest to our common Holly, on which it is propagated by buds and grafts in the usual way.

DAHON HOLLY (*Ilex cassine*).—There are two very distinct Hollies, from America, which are often confounded under this name; one, with small leaves (*Ilex cassine*); and the other, with large, smooth leaves with hardly a prickle on (*Ilex dahoon*), and thought to be a greenhouse plant; but the two are equally hard, only that *cassine* ripens scarlet berries, and *dahoon* never does with us.

THE NARROW-LEAVED HOLLY (*Ilex angustifolia*, alias *myrtifolia*).—A very rare plant indeed; but a very beautiful and well-marked species, from North America. It prefers a low, damp situation, being naturally a swamp plant in Virginia and Georgia. It was also called *Ilex rosmarinifolia*, which gives a good idea of its appearance.

THE PERADO HOLLY (*Ilex Perado*).—This is the *Ilex Maderensis* of some of our nurseries and some French collections. This is a Holly from Madeira, and is often kept in the greenhouse, but it is quite hardy. It has shining and nearly smooth leaves, and forms a close, dwarf, evergreen bush.

THE EMETIC HOLLY (*Ilex vomitaria*).—A scarce plant, from the sea-shore from Carolina to Florida. It is sometimes called the South Sea Tea and Cassioberry bush, in our gardens, also *ligustrifolia*.

ILEX LATIFOLIA, alias *laurifolia*.—A fine broad-leaved Holly, from Japan. Grafted on the common Holly, is quite hardy, and ought to be in every good collection, being the best of all the new Hollies.

ILEX DIPPYRENA.—A beautiful Holly, recently from the North of India, but quite hardy.

ILEX LATISPINA.—A very marked species, with broad prickles set in a zig-zag way on the leaf; quite hardy, and well worth having among new plants.

ILEX MICROCARPA.—Another very distinct species, with large, thick leaves without prickles, promising to make a large, handsome evergreen.

ILEX CORNUTA.—A very curious, new Holly, with long, fleshy leaves, having three formidable spines at the end of each.

ILEX FURCATA.—Another curious spined Holly of recent introduction, which promises to make a well-marked species; but all these new Hollies are so much sought for that only very small plants of them are sent out from the Nurseries. They are all in the garden at Bank Grove, near Kingston, and do not seem the least touched by the frost. I see they increase some of them by cuttings, as well as by grafting on the common Holly.

ILEX MAGELLANICA.—I have only seen but very small pot-plants of this either, but it seems a very distinct sort. These, and a few other sorts, are merely nursery names about London, but I do not know the authorities or the parties who gave these names. The plants, however, are becoming very fashionable, like the evergreen Berberies and Conifers; as also are the new Evergreen Oaks, of which there are several very interesting ones in the Nurseries. One, called

QUERCUS ILES ZAN, took my fancy very much at Bank Grove, the leaves being nearly as large as those of the common Oak.

QUERCUS AGRIFOLIA.—The Evergreen Oak of California is a very remarkable plant, having smooth leaves when quite young, but as the plant gets older the leaves turn as prickly as those of a Holly. "The long, narrow acorns, almost conical, are a remarkable feature in the species." Nuttall, the American botanist, who knew this Oak in California, says, "As a hedge it would form a very close shelter, and the leaves, evergreen and nearly as prickly as a Holly, would render it almost impervious to most animals." The wood is of no account.

QUERCUS SCLEROPHYLLA (Hard-leaved Oak).—A new one from China, a very marked evergreen species. It was sent over by Mr. Fortune, in 1850, and being quite hardy, it promises to make a handsome addition to our large evergreens.

QUERCUS INVERSA.—Another Evergreen Oak, from the north of India, by Mr. Fortune, quite different from any we had before, but in habit somewhat like our old evergreen Oak. These China Oaks are sold by the Messrs. Standish and Noble, of Bagshot, but, of course, any nurseryman in the kingdom could get them for any gentleman in the neighbourhood, and that is always the best and cheapest way to go to work. If I wanted a new plant from Dublin, or Glasgow, or Edinburgh, I would order Mr. Jackson, of Kingston, to get it for me. Of course, if I did not deal with him I could not ask him to take the trouble, and even then I would give him his own time.

OAKS IN GENERAL.

The kinds or varieties of Oaks, in all parts of the world, are just as numerous as the Geraniums, and as easily multiplied by seeds; they also run into sections, as distinct from one another as the sections of Geraniums. The *Ilex*, or Evergreen Oak section, and the Willow Oak (*Phellos*) section, are the most sought after for pleasure grounds and large gardens, and there is hardly an end to the variations they run into from the

acorn. The *Lucomb Oak* is the finest tree that ever originated in England. If people would but manage the different kinds of *Ilex*, or Evergreen Oak, so as to get them up like the Lucomb, or the Turkey Oak, some of the broad-leaved sorts of *Ilex* would make more handsome heads than even the Lucomb Oak. There are no plants in England worse managed than the old Evergreen Oaks, and that principally for not knowing how to prune them when they are young. They should never have but one leader; and when they come bush-headed from the first, heading them back to near the ground is the easiest way to manage them.

SYMPLOCOS JAPONICA.

Quite a new evergreen from Japan, with leaves like the Sweet Bay, and growing as tall at home as the Bay does here; the flowers are of no account. They have a *Symplocos* (*tinctoria*) in the southern States of North America, called the Sweet Leaf, which they use for dyeing yellow; and the Japanese use this one for decorating their idols, as we use the Christmas Holly. This promises to be a very beautiful evergreen, and to be as hardy as the *Cryptomeria*. Mr. Fortune sent it, in 1850, to the Bagshot collection of his novelties.

VIBURNUM PLICATUM.

A large, handsome-flowering, deciduous shrub from the north of China, sent home by Mr. Fortune, with round balls of snow-white flowers, after the manner of the Guelder Rose, very much cultivated in the best gardens in China. It comes nearest to an old American *Viburnum*, called *dentatum*; and I think, to make the best of it in this country, it ought to be grafted on *dentatum*, which will grow in any good garden soil, while *plicatum* refuses to grow well in many places.

VIBURNUM MACROCEPHALUM.—Another of Mr. Fortune's plants, from the north of China, where it seems to be as great a favourite as the Camellia. He says, there is a plant of it, in the island of Chusan, 20 feet high, and flowers all over, down to the ground, something like large heads of Hydrangea. I have seen this in flower in the gardens of the Horticultural Society, and I can safely say it is superior to the Hydrangea; but the heads are not so flat as in the Hydrangea, and the flowers are pure white. I have this fine thing in my own garden, but do what I will I cannot make anything of it; no frost seems to hurt it, and no soil agrees with it, as far as I can make out, and I see nothing for it but to graft it on some near relative—on *dentatum*, or *pubescens*, or some such allied plant; others must find it as difficult, also, or otherwise we should have had it at the May exhibitions among the very first.

MYRICA CALIFORNICA.

A sweet-leaved evergreen Gale, from California, by Hartweg to the Horticultural Society. This is a valuable evergreen, and is quite hardy; the first time I saw it was in-doors in a pot, and I mistook it for a broad-leaved Banksia, or something that way, which will give a tolerable idea of it to those who know these Banksias. I have also seen a plant of it loaded with seeds, which will make it cheap for a new plant.

DAPHNE FORTUNI.

A charming addition to our sweet-scented flowers, and belongs to the Mezereon section of the genus, coming into flower early in the spring and casting its leaves in the autumn. The flowers are much larger than those of Mezereon, and of a pale bluish-lilac. It has been ten years in England, but not grown half so much as it deserves.

EDGORTHIA CHRYSANTHA.

Nearly related to the Daphne; a deciduous shrub,

from Chusan, by Mr. Fortune. It requires a good, warm situation to flower well, but like the Yellow Jasmine (*nudiflora*) and the *Forsythia viridissima*, all from China, they answer much better as pot plants, to be protected while in flower, until such time as the plants are of a large specimen-size, when they will take care of themselves.

AZALEAS.

AZALEA OVATA.—Next to *Weigela rosea*, this is the finest-looking evergreen shrub on the hills of Chusan, according to Mr. Fortune, and the best of all he found in the east. It is quite a different thing from all our greenhouse Azaleas, being quite smooth in the leaves, and quite-hardy after it comes to a good size. It, however, as well as the *Viburnums* and the *Roses* which he introduced, do not get on with us, except in rare instances here and there.

AZALEA AMŒNA.—This is also a quite hardy, north-of-China plant, and most suitable for the front of a choice American bed. The flowers are of a light purple in the open air, and look as if one was within another, like the hose-in-hose *Polyanthus*, and the leaves are the smallest of all the race.

SPIRÆAS.

SPIRÆA LINDLEYANA.—As a standard, or for covering the north side of a house, or any other cold wall, this is invaluable, but as a bush it is only a fiddlestick, getting soon so confused that you can do nothing with it. It can be made standards of, exactly as they do standard Currants, first making cuttings, from which all the bottom eyes are taken; or, which is done much sooner, cut down a strong bush of it close to the ground, and make layers of the very strong, soft shoots which rise immediately; first cutting out the eyes from the part in the ground. Now is a very good time to cut one down, but it may be done all through the spring.

SPIRÆA ARLEFOLIA.—Ought to be in every garden for its elegant plumes of white flowers all through the autumn.

SPIRÆA BELLA.—Another great favourite deserving a place in the choicest collection.

SPIRÆA CUNEIFOLIA, **S. LAXIFLORA**, **S. VACCINIFOLIA**, and **S. ROTUNDIFOLIA**, are all North Indian low shrubs, well deserving extensive cultivation; and **S. FISSA**, from Mexico, a tall, handsome bush, equally so.

SPIRÆA EXPANSA.—Also a North Indian plant, with flat heads of pinkish flowers, is very handsome.

SPIRÆA PUBESCENS.—A newer one, from Chusan, with little heads of white flowers, and not more than a small tufted bush.

SPIRÆA PRUNIFOLIA, with double white flowers, is also from China, and is highly prized already for its elegant spikes of crowded flowers—a real acquisition—like a double-white Hawthorn.

SPIRÆA DOUGLASII.—A fine, late autumn-flowering one, with large heads of white flowers, in August and September.

SPIRÆA REEVESIANA.—Single and double flowers; the former is a graceful shrub; but naturally flowering very early in the spring it often fails with us, unless the wood is well ripened in the autumn. The double-flowering variety is said to be more free; but I never saw it. This last is quite a new shrub; as also one called *Spiræa callosa*, with nearly white flowers, but it is new to me.

SKIMMIA JAPONICA is a low evergreen, with scarlet berries in winter; quite new, and one of the best of the low, bushy evergreens. I have described it at length in a former volume.

DOUBLE CRIMSON PEACH, and the **Double white Peach**, both from Africa; ought to be in every select collection, particularly the crimson-flowered one, on which the fruit comes in clusters together, but it is of no value.

D. BEATON.

TOBACCO—NICOTIANA.

This is a plant that generally arrests a considerable amount of attention among visitors, and a whole chain of queries are launched upon the cultivator, coming alike from the young *gent* who never before had any idea of the look of the plant from whence he obtains his box of mild Havannahs; from the tyro feeling his way amid the vexing questions of taxative and social economies; and from the farmer, with an eye to the main chance, who cannot for the life of him see why, since he has been forced to compete with all the world in corn-growing, he is not allowed free scope for an equal test of his abilities in the supplying his countrymen with *Tobacco*.

The general position for the Tobacco-plant would be a rich piece of a field, or the sheltered, well-manured, kitchen-garden; but the kind generally cultivated—*Nicotiana Tabacum*, the Virginian or Kentuckian variety, and *macrophylla*, a very large-leaved species or variety—make a noble appearance in front of a shrubbery, the large leaves being far more attractive than the heads of dumpy pink flowers. Then there are other species, that instead of mounting from five to seven feet in height generally rise no higher than from one-and-a-half to two-and-a-half feet; have nice, sweetish, white flowers, such as *undulata*, sometimes called *suavcolens*, *rotundifolia*, and *longiflora*, that are neither uninteresting when grown in a bed, nor when cultivated as specimens in pots. Though some of these latter, if favoured by greenhouse treatment, would become perennial, yet all, when grown out-of-doors, will be most successfully treated as rather tender half-hardy annuals.

The botanic name is commemorative of John Nicot, who sent seeds from Portugal to France about the middle of the sixteenth century. The common name is attributed by different persons to different sources—some contending that it is derived from Tobago, the most southerly of the Caribbean Islands; others alleging that it comes from Tabaco, a small island in the bay of Panama; while others assert it comes from Tabasco, a district bordering on the Bay of Campeachy, in the Gulf of Mexico. It is altogether a matter of no moment which of these places, or if any of them, was thus honoured in giving a popular name to this narcotic, that, in spite of the edicts of princes, is accompanying the footsteps of civilisation, and, unless kept under due moral and sanitary restraint, is calculated to do, ere long, for mankind generally, what opium has done for its votaries, and the fire-water for its worshippers. A fact of more importance is, that all these places are within the tropics, implying thus that a high temperature is necessary to bring the Tobacco-plant to the highest state of perfection. True, very fair Tobacco is produced in the south of Europe, and even as far north as Holland, and what are called splendid samples come from Kentucky and Virginia, yet even the best connoisseurs allow, that for an agreeable puff that wafts them unconsciously amid the idealities of dream-land, there is nothing like a bit of real Havannah, at which place we know the temperature is not only tropical, but a dry, sunny atmosphere generally prevails, rains seldom appearing unless in July and August.

There is some difference of opinion as to the introduction of smoking into England, but it is generally supposed that Sir Walter Raleigh made it fashionable by his smoking parties at Islington, during the last decade of the sixteenth century. The practice—the virtue—or rather the vice—soon became so extended, that the princes of Christendom, with unerring infallibility, in the shape of the Pope at their head, promulgated shoals of awful penalties against the user of Tobacco, which proved just as effectual as the proclamation of the Emperor of China against his subjects using

Opium. Finding such edicts of no avail, they showed their worldly wisdom in filling their coffers with a heavy tax on the growth or importation of an article, the using of which they were powerless to prohibit—a tax that in one shape or another meets the tobacco consumer go almost where he will in civilised society. This is not the place to inquire into the propriety of a government taxing heavily any commodity, the use of which would foster the virtues, minister to the necessities, or encourage the vices of its people; but while a revenue must be collected, most disinterested persons would admit that that revenue should be raised from luxuries rather than necessities. In this former category I would place Tobacco. True, many a hard-working man, as well as they who would find it an impossibility to separate between the puffing of a cigar and an assumed gentility, look upon the “weed” as an indispensable *necessary*; and often have I heard a working man, when remonstrated with about his grumbling as to his circumstances, and yet wasting so much per week on the soothing herb, forcibly declare, that he would give up his dinner before he gave up his pipe, though I believe it was but seldom that dining was neglected if it could be avoided. Thus *both* had to be paid for, and the grumbling went on; the poor man forgetting that the chief means for his attaining comfort and respectability consist in striving, when young and healthy, for the means of securing some of the comforts and luxuries of existence, and then, by denying himself of their frequent use, obtain, by that honourable self-denial, the means of commanding comparative independence of character and position.

Since corn has got up to something bordering upon famine price, I have heard less grumbling, from my farmer friends, that they are not allowed to grow Tobacco duty free, when they must compete with the world in corn. To my understanding, this would merely be *protection* over again. Our farmers may grow Tobacco now, against the foreigner, as much as they please; but they know their only chance of success would be in not being taxed as the foreigner is. The lover of Tobacco, in any of its shapes, would only obtain then an inferior article, at but little diminution in price. Some farmers, last year, endeavoured to demonstrate to me, that on good soils in England they could raise a heavy crop of Tobacco as easily as a crop of turnips; but to this, considering the natural tenderness of the plant, I wholly demur. That a crop should thus be obtained, by sowing in May, I do not deny; for I have often seen strongish plants, the seeds of which had been self-sown and survived the winter. I have also seen strong patches of Tobacco far north of the Forth; but there, in my own practice, and when cultivated by others, with the greatest success, in Meath and Wexford, in Ireland, the plants were treated as half-hardy or tender annuals: the seed being sown in hotbeds during the middle or end of March, pricked out into another bed, where they could be protected, or placed separately in pots, and then transferred to rich, well-aired soil after the middle of May; shading them from the sun until the roots take hold, by means of pots, an evergreen branch, or a little clean, loose litter, placed thin, and fastened on each side with a clot of earth. By these means our summers are prolonged; and fine specimens, as respects growth, may be expected. But it should not be forgotten that it is a very exhausting crop, and requires very richly-manured land.

I hardly know what is the state of the law now. A lawyer told me, two years ago, that I was liable to a penalty for a piece which I had then growing—even though I applied it entirely to the destroying of insects. I suspect that Government would not interfere with a largish plot in a garden. With the first promulgation of the taxing of the article, any one was

allowed to grow half a pole for medical purposes; and, therefore, every cottager, who can conscientiously look upon Tobacco as a medicine, may comfortably grow that quantity; and then, by means of a slight hotbed, or raising his seedlings near his kitchen fire, and moving them to the window—much in the same way as mentioned the other week for Pelargonium-seeds—by careful tending and curing, he may secure from three to four pounds of very passable Tobacco.

The mode of sowing has already been referred to. As the seed is small it should be thinly covered. Whatever means are at hand for getting good plants by the middle of May should be adopted, as the quantity, if not the quality, will greatly depend on this. Towards the end of May, the ground having previously been well dunged, and aired, and pulverised, turn these good plants out about eighteen inches apart. I used to put them about sixteen inches in the row, and the rows three feet from each other. If taken from a box or bed a little shading was given at first. When young seedlings, as soon as they can be easily handled, are pricked out in beds or boxes, in lightish soil, and with very rotten dung beneath, giving them a square of three inches, from plant to plant, or even a little less, they can be raised with nice balls, by means of a trowel, and will soon take hold of the garden soil, and thus want but little shading. They must be watered every day in sunny weather for some time, using water well warmed, so as to increase the temperature of the soil as warm as new milk. At this tender stage the plants are exposed to various enemies; and a friend of ours has often told me that was just the best sign of how good a thing Tobacco is. Be this as it may, the wire-worm and the millipede will go some distance for a nibble, and traps of sliced Turnips, Carrots, &c., must be inserted in the soil as enticing guardians. Mr. Slug, however, is the worst to get rid of; brewers' grains will prove a more attractive narcotic for him than even the Tobacco, and dozing on heaps of these he may be caught napping in a morning. Failing that, a little soot and lime *often* sprinkled round the plants is a good remedy. Surface-stirring of the ground with the hoe, but, better still, with the points of a fork, will cause them to flit their quarters, and be of great service to the plants. Plenty of waterings will be eagerly drunk in in dry, warm weather. If there is abundance of manure in the ground, a little quick-lime in the water will render the manure more soluble for the plants. If the ground is not well manured, it should be applied with the waterings, in a liquid state; any kind being serviceable if not given too strong. By the time the plants have made from a dozen to eighteen leaves, the stem should be stopped, otherwise much of the strength of the plant would be thrown into the head of flowers and seeds. For garden use, two or three pods of seed will furnish an ample supply. After this stopping the leaves will increase rapidly in size. The check thus given to the ascending growth will cause laterals to push freely from the axils of the leaves, but these must be all carefully picked out as soon as they appear; in fact, the whole strength of the plant must be thrown into the large, massive foliage. The plants will be injured by a very small amount of frost, and, therefore, it is desirable to harvest the crop by the middle of September, or not long after; and, if all has gone well, the lower leaves will begin to show signs of arriving at maturity by that period.

In gathering, or rather in drying and preserving the crop, much care is necessary, so much so, indeed, that though it might be economical, so far as securing a source for destroying the green fly, it could never be economically managed, on a small scale, for securing the cottager four or five pounds of tobacco for smoking, if all the labour was to be accounted for. I have gathered the crop all at once, by pulling-up, or cutting.

down the plants close to the ground; or by going over the plants at several times, and making several gatherings of the larger leaves; and though by the last method more produce was obtained, and, therefore, the best means to follow when the plant was cultivated largely, yet, on a small scale, the gain did not counterbalance the additional trouble. In either case, after being gathered the leaves should have no more sun than was sufficient to soften them, so that they were so pliable as to be easily handled without breaking. In this state they should be stripped from the plants, strung together in strings through their midribs, so close as not to touch, and then hung up in a shady, airy place, under cover. The eaves of old-fashioned cottages, garrets, and sheds, through which there is a circulation of air, would answer admirably. When well-dried, they are taken down, packed neatly in a heap, the stem-ends inwards, and covered with a cloth, or a little hay, until they begin to ferment, taking care that the heat does not much exceed 100°, allowing them to remain several days, and then taking them out and drying, and submitting again to a similar process, by which time the midribs will be quite pliable. When again almost thoroughly dried they must be packed regularly and firmly in boxes and air excluded. If any thing like mould appear the leaves should be dried again, and then packed. Those who are interested in knowing how these leaves, after various washings and herbs added, are changed into the tobacco and snuff of our shops, would do well to visit a tobacco manufactory.

There is a mode somewhat simpler that used to be adopted by the Horticultural Society, and if a nice brown colour in the leaf, if a rather pleasant smell, if the highest commendations from professed judges, who used to *come out* with their *splendid* Havannahs of home growth, be any criterion, then the outline of the system is worth mentioning, and, where circumstances admit, worth imitating. The plants were all taken up in September, and taken at once to a Mushroom-house, where they were suspended against the walls, and by strings all over the house. The house was then shut, and by means of fire-heat a temperature of 70° was maintained for four or five days, until all the leaves were yellow. The heat was then raised to 75°, and the leaves, with the exception of the midribs, became of a fine brown colour, the midribs being yet green and succulent. The heat was then increased to between 80° and 90°, and in five days the midribs were dry and brittle. The leaves being curled and very brittle, heat was discontinued, and the floor of the house watered several times, until, by its evaporation, the leaves were again soft and pliable, when they were stripped from their stalks, laid out evenly in a heap, well pressed, and then packed in a tub. In a fortnight, a little mould made its appearance, when they were re-hung in the house, gradually re-dried, and the floor more gently watered than before, and were re-packed again and kept in a good state. Many years have passed since I saw some of this Tobacco, and great changes have taken place since then, but as a home-cured article it was very superior, and no doubt answered the designed purpose well.

If carefully used, such home-grown Tobacco may be safely employed for the extirpation of insects; but if allowed to burn too fast, by using it in a dry state, or without abundance of a damp covering, such as moss, it will do more harm to plants near it than to the insects. I have seen some used that had been half-rotten in the sweating process; I have seen others that had been dried by being hung in an open shed, and its good properties thus dissipated: both doing great injury to plants. I recollect smoking a peach-house, when an apprentice, with this latter material, blowing away with might and main at a hole in the side of a pot filled with it, until the foreman, standing at the outside of

the door, should pronounce the house full enough, and afford me an exit from such a Pandemonium. In three days almost every young Peach had tumbled. Unless, therefore, some care is taken in the drying and the burning, I would advise amateurs to stick to the manufactured shag, so far as their plants are concerned. The most of the so-called Tobacco-paper is worse than home-grown Tobacco, however badly cured. In large places, the latter, with moderate attention given to it, used alone, or mixed with the manufactured, will be found economical. R. FISH.

THE ANTIRRHINUM.

THERE are few flowers that have been so much improved by the skill and perseverance of the florist as the Antirrhinum. The species that has been hybridized and improved is named by the botanists *Antirrhinum majus*. It is a native of Britain, and is found on rocks and old walls in abundance. The generic, or family, or first-name, is derived from *anti*, like, and *rhin*, a snout,—flowers having the appearance of an animal's snout. The second, or specific name, *majus*, means the larger, to distinguish this species from the rest of the genus, but more especially from *A. meananthum*, the lesser-flowered. The varieties of this greater Snapdragon (the English name) are very numerous. A seed-bed will produce endless varieties; and this propensity to sport has been made use of by florists to improve the form, size, and colour of the progeny, and that, too, with considerable success; but there is still great improvement needed to render the varieties standards of perfection.

The *Properties* that are considered necessary to form a perfect flower of an Antirrhinum have not been defined by any florist, that I am aware of, excepting Mr. Glenny; and I hope he will excuse me if I transcribe his ideas on the subject, though I think, if Mr. Glenny himself had to write them over again, some of the points would (as I hope to see the flowers themselves) be better defined.

"Properties of a first-rate Antirrhinum:—

"1. The plant should be dwarf; the flowers abundant; the mouth wide, and the more the inner surface turns up to hide the tube the better.

"2. The tube should be clear and pure, if white, and if any other colour, it should be bright; and the mouth, and all the inner surface, should be of a different colour and texture (?), and form a contrast with the tube.

"3. The petal should lap over at the indentations, so as not to show them; the texture of the tube should be like wax, or enamel; the inside surface, which laps over, should be velvety.

"4. When the flower is striped or spotted, the marking should be well-defined in all its varieties (variations?); the colour should be dense, whatever that colour may be.

"5. The flowers should form spikes of six or seven blooms, close, but not in each other's way; and the footstalks should be strong and elastic, to keep them from hanging down close to the stem, which they will if the footstalks are weak."

The way that they should be shown requires some consideration. I am an advocate for all florists' flowers (that can be grown so successfully) to be shown in pots. The public then can judge more effectually of the appearance they would make in the borders of the flower-garden. We have seen that the Rose, the Pansey, and the Carnation can be grown and exhibited in pots with excellent effect, and I am certain the Antirrhinum can, also, quite as well be grown and exhibited in pots—thus showing the plant as well as the flower. This flower is

quite capable of being shown in classes; and they should be distinguished as follows:—

1. SELFS.—Such as have no spots or stripes.

2. STRIPED.—Such as are clearly striped; no spots to be allowed.

3. SPOTTED.—Such as have the whole flower spotted, though the tube may be allowed to be of a pure white, or any other colour, providing it be clear, bright, and distinct.

The following varieties prove that such a division into the above classes is practicable, even with such as we possess now.

SELS.—*Saturne*, deep purple-crimson; *Sulphurea* perfecta, clear sulphur.

STRIPED.—*Flamingoe*, striped rose; *Hendersonii*, blush and red edge.

SPOTTED.—*Constance*, purple, and yellow throat, with white blotches; *Van Erchoti*, red-crimson, with yellow throat and white blotches.

I have thus, as I think, clearly made out, to the satisfaction of the unprejudiced reader, that the Antirrhinum is capable not only of being improved in its desirable properties, but also may be further improved as an exhibition flower, by being grown in pots, and exhibited in at least three classes, thus creating a greater interest to the grower, the exhibitor, and the visitors to such exhibitions where they are so shown. I do not, by any means, consider such distinctions frivolous, nor the raising of improved flowers useless. On the contrary, I am certain such pursuits tend to civilize and elevate the minds of such persons as may devote their leisure hours to such recreations. Every hour that can be honestly spent in the culture of flowers is, at least, innocently spent, and may, in many instances, be profitably so, even to the most devoted utilitarian, for whatever pursuit brings most cash into the purse is, with some minds, considered the most worthy of being followed. This, perhaps, I may say, sordid motive, influences sadly too many of the cultivators of such lovely things as flowers. Even such may have their passion gratified by raising seedling florist flowers; and, in Antirrhinums, especially, there is a wide field for speculation. Passionate lovers of new Antirrhinums will not grudge giving a good price for a really superior variety, and, therefore, even the utilitarian may be induced to try his hand at the game, though I hope many, many others will follow on in the same track merely for the love of the pursuit, independently of any profit there may be in the event. In my next paper I will endeavour to direct such in the way of success.

T. APPLEY.

(To be continued.)

STOVE FERNS.

(Continued from page 383.)

ELAPHAGLOSSUM SCOLOPENDRIFOLIUM (Scolopendrium-leaved).—A Brazilian Fern, of great beauty. The barren fronds are more than a foot long, pale green, wavy at the edges, and of an oblong lance-shape. The stem of these leaves is about six inches long; the stems and margins of the fronds are covered with hair-like scales. Fertile fronds upright, nearly eighteen inches high, upon a stem of eight inches. Root-stock creeping, short, and scaly. Increased by division.

E. VILLOSUM (Shaggy).—A curious, handsome Fern, from the West Indies. The barren fronds are remarkable by being covered with long, shaggy hairs; they are of an oblong lance-shape, sharp pointed, and a foot long. Fertile frond narrow and short. Increased by its creeping root-stock.

FADYENIA.—A genus named in honour of Dr. Fadyen, who spent several years of his life in Jamaica. There

is only one species known, and a very curious little Fern it is. I have cultivated it for several years, and found it to grow best if the pot containing the plant was placed in a shallow pan of water in the Orchid house. Very little water was given to the soil in the pot. The plants grew strong and spread over the surface of the earth, completely covering it with their broad, sterile fronds, which frequently produced young plants at the ends of the fronds.

F. PROLIFERA (Fruitful).—A Jamaica Fern. The sterile fronds are simple, spreading horizontally, and frequently producing plants at the points; hence it is called proliferous. The fertile, or seed-bearing fronds are also simple, but stand upright in the centre of the plant, growing about five inches high, lance-shaped, narrower at the base, and blunt at the apex. The most remarkable character of the species is the seed-vessels. These are disposed alternately on each side of the midrib; they are very nearly the shape of a horse-shoe, with the margins thick and hairy, and are very large and conspicuous. Increased by the young plants produced at the ends of the sterile fronds. A very curious, interesting, small Fern that ought to be in every collection.

GONIOPHLEBIUM.—A genus of Ferns formed out of *Polypodium* by Mr. Prest, and so named from *gonia*, an angle, and *phlebia*, a vein—the veins forming angles on the underside of the fronds. The distinguishing characters of the genus consist in the angular position of the veins. The sori placed at the end of the vein, and these seed-vessels being round.

G. ALBO-PUNCTATUM (White-spotted).—A very distinct species, from the Brazils. Fronds two feet long, almost triangular, pinnate, having the upper surface spotted over with white scales. Leaflets undulated, and the upper ones without stems. Seed-vessels in one series. Root-stock scaly and creeping, by which it may be easily increased.

G. ARGUTUM (Sharp-cut).—A beautiful, rare Fern, from Nepaul. Fronds pinnate, of a lanced-shape, with sharp-pointed leaflets, growing a foot-and-a-half high; stems pale brown, and shining; seed-vessels large in one series, and of yellowish colour. Increased by dividing the scaly, creeping rhizoma. A very elegant Fern, worthy of universal cultivation.

G. CATHERINE (St. Catherine's).—A Brazilian Fern, of great beauty. Fronds almost triangular, pinnate; the leaflets blunt and oblong; root-stock creeping, and covered with scales wrapping over each other; seed-vessels in one series, and only one, the upper part of the leaf. Another elegant Fern, increased by dividing the creeping root-stock.

G. DEFLEXUM (Bent-down).—Another beautiful production of that prolific country, Brazil. Fronds pinnate, growing two feet in height, with the leaflets bent down and undulated. Stems dark green; and seed-vessels in two rows. Root-stock scaly and creeping, by which it may easily be increased.

G. HARPEODES (Scimitar-like).—A tall-growing, rather coarse Brazilian Fern. Fronds pinnate, the leaflets curved in a scimitar-like form. The fronds stand nearly erect upon a stem a foot or more long, and often the frond itself reaches the height of three or four feet; hence, it should only be grown where there is plenty of room. Seed-vessels large, and in one series. Increased easily, by dividing the thick, scaly, creeping root-stock.

G. INCANUM (Hoary).—A West Indian Fern, of a dwarf habit. Fronds pinnate, lance-shaped, and densely covered with hoary scales; leaflets obtusely oblong, and leathery. The plants grow about nine inches high. Seed-vessels in one series. Veins indistinct. Root-stock creeping and scaly. Increased by division.

G. LATIPES (Broad-footed).—A Brazilian Fern, of a neat habit. Fronds pinnated, slender, and drooping,

growing eighteen inches high; leaflets long and narrow, undulated, and spreading; seed-vessels small, and in two ranks. Increased by dividing the bright green, creeping root-stock.

G. MENISCFOLIUM (Meniscium-leaved).—A tall-growing Brazilian Fern, of great beauty, arising from the beautiful arrangement of the angulated veins. Fronds pinnate, growing three feet high; the leaflets are six inches, sharp, lance-shaped, undulated or wavy, and of a shining, bright green colour; seed-vessels large, often in two rows, and of a yellowish colour; stems bright green, and jointed on the creeping, scaly root-stalk. Increased by division. A truly elegant Fern, but requires plenty of room to show off its beauty to advantage.

G. PILOSELLOIDES (Pilosella-like).—A West Indian, low-growing, creeping Fern, suitable for rustic baskets to suspend in the stove. Fronds simple, sterile, covered with light-coloured hairs, oval-shaped, and only two inches high; fertile, hairy, narrower than the barren fronds, and grows nearly double the height; seed-vessels in one series, and each surrounded with narrow scales; root-stock slender and creeping. Increased very readily by division.

G. SUBAURICULATUM (Half-eared).—From the Isle of Luzon. The most beautiful Fern in the genus. Fronds pinnate, growing four feet long; leaflets long and narrow, bright green, and subauriculate at the base. The fronds being long and slender, they are pendulous; hence it is a grand plant for a basket. There is a plant of it at Kew so growing, that has nearly twenty full-grown fronds, some of which are nearly eight feet long, with a centre stem not more than eight inches long. This is a noble, elegant plant, and this is the way the plant ought to be grown to show its beauty. Increased by seeds only, though sometimes young plants are produced on the root-stock.

T. APPLEBY.

(To be continued.)

GARDEN FENCES—WALLS.

ALTHOUGH it often happens that circumstances determine not only the shape and size of a kitchen-garden, but also the description of fence by which it is surrounded, yet there are cases in which a choice can be made, and in such cases some discretion ought to be used, as an error run into in this respect is not so easily rectified as one affecting a less permanent structure; and as the subject is one of great importance, the readers of *THE COTTAGE GARDENER*, will, perhaps, allow my entering into it more fully than on matters having a more transient existence; and in going through the subject, I will endeavour to notice some of the different structures or fences which have either been used or recommended as suitable for the purpose in question.

Many years ago, I had the management of a garden which had been formed by a gentleman as well skilled in mechanical science as he was in horticulture and the other branches of Natural History, and in this garden he had introduced many novelties, or, at least, such as were regarded so at that time; and amongst others, fences and other contrivances for training fruit-trees were plentifully scattered about, and, certainly, the best substitute for a brick-wall that ever I saw was of his contrivance, in the shape of a wooden one of the ordinary height of ten or twelve feet. This wall, if it might be so called, was not exactly straight, it being formed in divisions of just such a length as to hold one tree, and which stood in a sort of zig-zag line to the general direction of the whole. Thus, for instance, supposing the general direction to have been from east to west, then the first division of twenty or more feet (for I have forgotten the exact dimensions) presented a

south-east aspect, while the next length would be south-west in a similar way, and the third would be full south, and then another south-east again, and so on; these breaks serving the purpose of preventing that onward current of cold air which it was supposed acted so seriously in preventing trees from bearing well or ripening their fruit. It is, however, proper to observe, that the angular positions above given were not quite so much as is represented by a full south-east or south-west exposure, but the general direction being, as I say, to have a full south aspect, the divisions were so arranged as to present a few points bearing east or west of that direction, and though the appearance was, in the opinion of some, rather singular, it was not unsightly, and the trees seemed to be benefited by it. Observe, as I say, it was built of wood; a strong framework was set up like high posts and rails, and on the sunny side of these deals about one inch thick were secured upright, and fitting as close as they could be made at the time, a slender stone kerb run along the bottom, merely to prevent the boards from resting on the ground, and the top was surmounted by a sort of coping-board, not projecting more than two inches, although its width might be increased; but this I think is rarely called for. It was tarred over to save it from the effects of the weather, but paint might, perhaps, have proved a greater preservative, but I am not altogether sure of that, but of this I may speak hereafter; suffice it to say, that in addition to the upright framework which supported the boarding aforesaid, a series of braces were placed at the back to support it against the effects of trying winds, which certainly did not add to its appearance on that side, but they could not well be done without; the front side, however, was plain and smooth, the upright posts, &c., being flush with the boarding.

This wooden wall was covered with Pear-trees, which did very well on its sunny side, the back being appropriated to Currants, &c., which did well likewise, and to young gardeners it formed a capital place to nail on. One evil, of course, it had, if it could be called an evil, the boards always got so much sun-dried in periods of hot weather as to occasion considerable openings between, at these times, and, consequently, admitting currents of air both ways; whether this was prejudicial or otherwise, I will not take upon me to say; I should feel inclined to think that at the time such currents of air took place the warmth of the atmosphere was such as to render it useful, rather than otherwise, and as the openings swelled up during the winter, the effects at the time the trees were in bloom was not felt.

Now, though the above differs but little from the ordinary close paling fence, against which it is not unusual to train fruit-trees, yet, as it was much higher and destined to act as a garden wall, I here adduce it as one that was in existence, and answered well, and it certainly as much deserved to be copied as some other contrivances of more recent origin, this being made, I believe, in the early part of the present century, was, some thirty years ago, well covered with trees, and though it did not deserve the poetic name of being one of the "wooden walls of old England," it must now be an "old wooden wall."

Our readers will, perhaps, remember, that in some of the early numbers of "*London's Gardener's Magazine*," a plan was suggested of having walls built of slates, held together by frame-work of some kind or other, the slates to be made moveable, and the frame-work also, in order that it might be made to do duty to trees planted on trellises in various places, or, when made stationary, it was expected that trees being planted on both sides of it, a considerable amount of heat would be transmitted through to hurry on the growth on the shady side, more so than would likely be done by a brick-wall; and some

enthusiastic cultivators suggested that the slates being made movable they might be slipped out and placed behind the tree that had been denied the all-important benefits of sunshine; whichever of these ways were adopted, it was expected that an advantage would accrue from such a dark body as slates absorbing so much solar heat, but it was forgotten how cold a substance it was at other times, and that if it speedily received heat from the sun, it quite as quickly parted with it; besides which, the trouble and expense of moving such an intricate piece of mechanism put it beyond the wishes of those who might have adopted a more simple and efficacious plan; at all events, the plan never became popular, and but few were erected on this rickety principle, yet, it doubtless afforded a good hint to those who have since carried out the idea of having two tier of trees in a narrow enclosure, which they designate a "glass wall;" for the trees I speak of, being planted and trained back to back, with the slate between them, it required no great amount of ingenuity to adopt another substance for slates, and to place it on both sides of the trees it was intended to protect, but as these are merits attached to glass coverings, which slate has no claim to, it is only proper to observe, that at the time the latter was adopted glass was too expensive to meet the wants of every one, but it is now, perhaps, the cheaper article of the two, while its utility, in many ways, is so great, and so varied, that I must leave for another time the task of detailing the uses it is applied to as forming a part of the "garden fence," to which this chapter is devoted. I must, also, leave the other descriptions of boundary lines for a similar paper, as well as the upright, arched, and hanging trellis, and the other mode by which a division is made between one part and another, and as such form important features in a garden, a few notes to enable the amateur to choose the one most adapted to his wants, will, probably, be useful.

J. ROBSON.

THE FATTING OF SHEEP.

(Concluded from page 386.)

HAY is also a most valuable and important material in the fattening of Sheep; it is, however, with the exception of straw, the most bulky of all our dry kinds of food in use, compared with the nutrition it contains; and in the case of feeding ruminating animals its use is very desirable, the bulk being requisite to assist digestion in animals of this class. The sort of Hay which may be designated as Sheep Hay, is that composed of all the finest and most nutritious of the grasses; and as the selection of these varieties of grass, and the method of making the Hay, is a matter upon which the value of it will depend, I beg to refer my readers to the article I inserted upon the subject in *THE COTTAGE GARDENER* for the month of June last. It may be shortly stated, however, that the White Dutch Clover and the Trefoil or Hop Clover are the best, and of the grasses no sort can be compared with the Italian Rye grass for the making of first-rate Sheep Hay.

After having gone through the whole catalogue of feeding materials commonly used for Fattening Sheep, and somewhat in detail, it is now time to treat of the mode of feeding, for although this part of my subject may be considered by many a very plain and simple process, yet my experience has shown me that ignorance or gross neglect prevails to a great extent in connection with the

detail of feeding fattening Sheep. It is not only necessary that all the best feeding substances should be prepared, and ready at hand, but it is also essential that the animals should receive their allowance of the different kinds of food with great regularity, and at a particular time of the day; at the same time, the quantity given should not be in excess of their requirements, otherwise great waste must be the result.

In commencing the fattening process with a lot of Sheep which have been kept previously only in store condition, it is not right to allow them a full quantity of rich feeding substances at the onset, but they should be accustomed to it by degrees, in order that they may make gradual progress, and that the material used in feeding may afford the most profit, as poor Sheep will not yield a good return for a full allowance of rich food, nor will the constitution of the animals endure it without great risk and loss of health.

Upon farms containing mixed soils, the warmest and driest land should be selected during the winter months, but generally after the middle of March, Turnips may be fed upon cold or clay soils with advantage. In feeding the varieties of common Turnips upon dry land in the early part of the season, and before the Sheep are far advanced in condition, they may be allowed to eat the roots upon the land. Tegs, or two-teeth Sheep, when they commence feeding the Swedish Turnips, and which they ought to do in the months of January or February, should receive their food cut and placed in troughs, this being requisite not only for the purpose of consuming the crop without waste, but inasmuch, as about this time they usually shed their teeth, they cannot, therefore, be made to eat their roots uncut advantageously.

The preparation of food is the next point to be considered. When Turnips are prepared in readiness for the cutter, it should be done with care, and in order that the roots may be consumed without waste they should be entirely free from earth. This work is often done in the most imperfect manner—large chips of the Turnip being cut off with the rootlets, as also the stem or neck of the bulb, which, being left on the land, are trodden under foot and left unconsumed; for I find, when Sheep are well-fed at the trough they will not eat anything off the land. It is, also, necessary that a provision should be made against a period of severe frost, which, in case it occurs at all, usually happens in the month of January; and when the system of pitting the whole crop is not adopted, a sufficiency of Turnips should be heaped and prepared to feed the stock through that month. In preparing Oil-cake for feeding, it should be broken fine, with as little dust or meal as possible. When any of the pulse or grain crops are used for feeding they should never be ground into meal, but merely crushed—this will prevent waste; nor should they be used in the whole or entire state, because any of the grains being dropped on the land may vegetate and mingle with succeeding crops.

I am now arrived at that part of the subject which relates to the manner of feeding, but having omitted

my remarks upon the preparation of Hay, I beg to say that it should always be ready at hand. When convenient, the rick of Hay ought to be made in or near the field of Turnips, as this article is never so good for feeding as when it is cut out of the stack and given immediately; where this is not practicable, a moveable Hay-house should be kept in the field, where three or four days' allowance may be held in reserve in good condition. I am aware that the method of cutting Hay and feeding as chaff is approved by many parties, but I am of opinion that it does not answer a good purpose for fattening Sheep; but having gone into the subject in detail in my paper upon the management of Forward Ewes, I beg to refer my readers, who may require information upon the subject, to No. 273 of THE COTTAGE GARDENER. My experience has taught me that fattening Sheep should receive their food in the following order—The first thing in the morning, and in the short days of winter, as soon as the shepherd can see to work, one-half of the daily allowance of cake or corn should be given; immediately after which, the morning bait of Hay, in such quantity as they will eat readily without waste; the troughs should then be supplied with cut Turnips, Mangold, or Carrots, whichever root may be in use, at intervals during the day; about three o'clock in the afternoon, the second moiety of cake or corn should be given, followed by the afternoon allowance of Hay. It is necessary to supply Hay early in the afternoon, otherwise the Sheep are apt to draw away to their night lair, after which it often becomes damaged and unpalatable. The last supply should be roots, filling the troughs to the brim, in order that during the long nights of winter the wants of the sheep may be readily supplied.

If the suggestions and modes of management recommended in this paper be strictly adhered to, I do not hesitate to say that Sheep will fatten as quickly, and with as much profit, as can be obtained by any mode of open field-feeding.

When Sheep are fat and fit for market, it is a matter of some consequence as to how they may be disposed of to the best advantage. In drafting them for market, let them be carefully matched, both for size and quality; the large sheep should be sold separately from the lesser ones, as they will then attract two sets of buyers; and when matched in quality, both buyer and seller will be the better enabled to estimate their weight and value.

JOSEPH BLUNDELL.

ALLOTMENT FARMING.—MARCH.

Now will the fortunate holder of a nice little plot of land,—enough to keep him from having to purchase with hard cash his potatoes, carrots, parsnips, cabbages, &c.—begin to take fresh heart, notwithstanding the painful gloom of the past winter—one that will be long remembered by thousands. But our Scotch neighbours have an old saying about quarrels, which, I suppose, amounts to this, in simple English, "Let bygones be bygones;" and so say I. Lamentations about the past are but of small value as compared with resolutions, and a stern self-reliance as to the future; and the man who is ever depending on his neighbours or ex-

traneous assistance, may be likened to a weak building, which relies on props and shoring for its security. No individual, no nation, can long stand secure that knows not the value of this high principle of self-reliance; and I doubt not, that by this time our Allotment readers, in general, scarcely need reminding of such things. One thing may here be remarked, and most consolatory it is—the tendencies of the age are benevolent, inasmuch as all orders of society in our favoured land daily perceive, more and more, their mutual dependency on each other; and the knowledge of this, I need scarcely say, is the very basis of social order, of progress, and a bettered condition ultimately among our labouring classes.

The weather, since the late intense frost, has been, in these parts, of the very best kind for the period as to facilitating the necessary operations; and I should hope that my cottage friends have not stood with folded arms until now. They scarcely need reminding of the vast importance of digging ground whilst it is in a tolerably dry or mellow state. Some people have an idea that they must wait until a few days before sowing time before they dig their plot, but this is nonsense. I am prepared to admit, that when soils are exceedingly stubborn it becomes a question as to when and how they may be best fitted to receive the intended crop. But, now let us see what ought to be the cropping policy of our little gardens for the ensuing year; for it is by no means essential that every year's cropping should be the same.

I would here once more impress our allotment friends with the fact, that the culture of plots is by no means obliged to be the same as that of their more countryfied friends. As for the price of wheat in another year, no material opinion can be formed; it has risen to a fearful height this winter and spring, and well must it have been with those holders of small plots of land who took our constant advice of laying out most of their strength in cultivating such roots as Parsnips, Carrots, Swedes, &c., instead of ephemeral summer crops.

I would again repeat the advice formerly given, to adhere to such maxim; for, what with a grievous war, and the possibility of another slender harvest, and other considerations, we must not, I fear, expect very cheap bread for some time to come. And I may here urge the importance to those who hold plots near to towns or markets of trying their hand at something that will sell well, especially such light matters as will afford them a chance of a few Turnips, Coleworts, or other greens, afterwards; and, as before observed, the *Horn Carrot* is a most eligible thing. If any one is still inclined to try a few beds, he may yet carry out his views by proceeding immediately; although they should have been sown in the middle of February. The seed should be well rubbed, and then mixed with damp soil, and set in a warm place, in a room with a fire in: it will be found to have commenced germination in about three days, and must then be immediately removed to the coldest place in the house for three days more, and then sown. The soil should be in the most friable state, and they are by far best in beds elevated six inches above the ground level. We sow them in cross rows made by the finger, at four inches apart, and thin them slightly when little plants. This done, they may be bunched and sold for a good deal of money in May and June, and the ground at liberty, by the end of the latter month, for a full winter crop of roots or other vegetables.

I would point, too, to what are termed *Early Coleworts*, or Cabbages. I fear, however, the imperious Ice King has been a severe meddler amongst these usefals. Those who are fortunate enough to possess lots of these, will do well so to scheme their cropping affairs as to allow rows of these a place for awhile, especially where the soil is good. There will be no necessity for suffering them to become Cabbages, in the ordinary sense of the term; such has been the character of the past winter, and such the position of the rising spring, as regards the vegetable question, connected with high prices in other things, that there is sure to be a keen demand for these things until June, especially in the vicinity of thriving commercial towns. In these days of steam, I call it "vicinity" when a garden is close to a line of rail, although twenty or more miles from the market.

Early Lettuces, too; those who have secured nice winter plants, and have them, as mine are, fresh as a daisy, on well manured soil, in warm corners—what a good article would

they be for the allotment holder or cottager to push into the market in the middle of May. Indeed, it is much to be lamented that our manufacturing and agricultural labourers, who hold a nice little plot of land, do not better understand their position in regard of these market matters. There really needs a little, highly-condensed hand-book to guide them; a waistcoat-pocket affair; but, to be really useful, it must be written by "one who has whistled at" the spade.

And now, after speaking of schemes and policies, let me turn to the genuine old-fashioned work of the month.

First—are your plans of cropping determined on? If not, you are much to blame. Set to and decide immediately. Above all, take care to secure some good *keeping roots*; and if you cannot eat them your pig will. I need not repeat them here; you know all about them and their importance. The past winter will have taught you a lesson you will not speedily forget. Let your cropping scheme be so planned as that two-thirds of it shall be in the main intended for keeping roots, unless you can comprehend my suggestions as to market work, when you are welcome to plan as you please. Remember, that most of these roots require deep digging, and most of the manure at about a foot to half-a-yard below the surface. They thus obtain the most power when most needed—say from the end of June to the end of August. But it is well to do even more, and which I have frequently suggested in these pages—to do what our great agriculturists do—to use a little dressing in the drill, for it is of the utmost importance for young seedlings that when they come up that they be strong plants betimes. Our readers will remember that I have repeatedly advised a soot compost for this purpose.

Parsnips must be got in immediately. I sow in the third week of February. The ground, being prepared for Mangold or Swedes, may either have early Potatoes between the lines intended for the root-crops, or a few roots of early Coleworts may be obtained from it. Anything which will be cleared off the ground by the early part of July. A provision, indeed, must be made, by some means, for a few *Cabbages*, but they should not be permitted to occupy ground as a principal crop; plenty of spaces will be found for them.

Onions, if not sown, may be got in by the middle of March. The ground deep dug; a little manure kept well down, and a little of the soot and guano mixture sowed by hand over the seed before soiling it over. Let the beds be rolled hard after sowing when they are very dry.

Peas may be sown for a full summer crop in the first week, choosing the *Redman's Imperial*, which rises about thirty inches high. The cottager should make this his last sowing.

Broad Beans.—The last planting must be got in immediately; indeed it is getting full late for a full crop.

Turnips.—A few of the *Early Dutch* may be sown on any spare border in the early part of the month; they are, however, more a luxury than a profit.

Lettuces.—A little of *Ady's cos*, or *Bath cos*, may be sprinkled in with the Onions, to be transplanted between other crops; and it will be well to sow a good sprinkling again towards the end of the month, as plants from these two sowings will be much larger than any during the remainder of the summer. Indeed, March and July are the two months in which Lettuce sowing becomes most profitable, and three sowings should be made in each by those who keep a pig, as their waste leaves and stems are capital pig food; to a sow with pigs more valuable still; whilst Lettuce is peculiarly the cottager's salad, and known to be not only wholesome but nutritious.

Spinach may be sown to advantage in the first week of March, as a mixed crop, but must on no account occupy land as a principal.

A little *Cabbage* of a dwarf kind, such as *Matchless* once was, should be sown once a month until September. Towards the end of the month, or in the early part of the April, the larger *Carrots* may be sown. The middle of April, however, is a safer period. As to other little proceedings, such as sticking Peas, filling up Cabbage blanks, planting half-a-dozen Red Cabbages to pickle, and so forth, the allotment man will of himself remember all about them. I here try to remind him that the hoe or fork must be kept agoing. *No quarter to Weeds*, must be the motto. If the first spring weeds are allowed to go to seed, one might fancy the owner

by no means an idle man, inasmuch as he has thereby provided himself with a doubled amount of labour.

Finally; let all cultural processes but planting-out be done when the soil is dry. R. ERRINGTON.

APIARIAN'S CALENDAR.—MARCH.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

BEE'S GATHERING POLLEN.—Bees may now be seen upon a bright day in the Aconites and early kinds of Crocuses, collecting the little pollen and honey which they afford; and it is but little indeed—only just sufficient to arouse the workers to activity, and the queens to depositing their eggs; therefore, without careful and constant feeding, death by starvation must follow; for I imagine that not one stock in ten has sufficient honey in store to support it through the winter and early spring.

FORSAKING HIVES.—Where the population is low, and little or no food in store, the bees are very likely, upon a fine and mild day, towards the end of the month, to forsake their hives entirely, and to join themselves to more populous and better-stored communities. This desertion, when it happens towards the end of April, is frequently mistaken for an early swarm; the only means of prevention is to keep them well supplied with food; but even this will not, in all cases, keep them from leaving their hives.

WASPS.—It will be well, during the present and the next month, to be looking for queen-wasps, and destroying every one that makes its appearance. A garden-syringe, as I have already said, is the most useful thing I have ever found to effect their destruction, for if discharged at them, it brings them to the ground, and the foot then finishes the business.

DORKINGS AS RECENTLY EXHIBITED.

If the value of good Dorkings has greatly increased during the past year, the quality of these birds has certainly made a proportionate advance. Such a result speaks most favourably for the good already accomplished by Poultry Societies, against which the charge has been so often levelled, that, however advantageous for the purposes of the fancier, they would have little effect on the breeds that were destined to provide for the wants of our tables. But since the farmer's fowl, as the Dorking has been not inaptly called, has thus prospered under their auspices, and to no other cause can their present position be justly assigned, their avowed object, "the improvement of the various breeds of domestic poultry," has, in this instance, at least, been admirably effected.

The Exhibition of the Royal Agricultural Society at Gloucester, in the summer of 1853, brought together by far the best collection of Dorkings that had ever been submitted to public notice; but manifest as the improvement on that occasion, it was even surpassed by the display at Bingley Hall, in December of the same year. In the expression of such an opinion, full weight is attached to the relative conditions of the two shows, of which the former, in a great measure, consisted of young chickens, whose subsequent appearance, in many instances, at Birmingham, presented them in at a more matured form.

A few years since, mere size, and that, we imagine, often falling short of the present average, was mainly regarded by the breeder, to the exclusion of both feather and form, and since in this light the characteristic feature of the race, the fifth toe, mattered little, the large Surrey or Sussex fowls destitute of this supernumerary number would have answered all his requirements. But now we have not merely advanced with respect to feather, but the well-bred Dorking of the present day, in its improved form, gives a larger proportion of flesh compared with offal to that produced by its four-clawed connexions, and taking the best specimens, no loss of weight, we believe, need be submitted to.

But there are few persons so indifferent to external appearances, that where beauty of plumage can be combined with the economical properties of a fowl, a preference will not be awarded to the bird thus distinguished over that

which lacks the same advantage of good looks. Not merely, indeed, have the colours of the Dorking improved, but the plumage now frequently attains a degree of firmness and condition in strong contrast to the loose-feathered specimens that breeders were formerly content with. Dorkings, it must be admitted, cannot be bred true to colour, as that phrase is understood with many other families of fowls, but this great point of "condition of feather," indicative of health and vigour, and so agreeable to the eye, may now be easily attained throughout the various shades and distinctions of their colour. And here the great point of excellence, combined with figure, in which the Dorking pens of 1853 have stood pre-eminent.

That these two essential qualities have been gained, to an extent not previously witnessed, will hardly be contested; nor, as has been already intimated, need a comparison of present with past weights, taken as an average of good birds, be apprehended as tending to show that the improved form and feather has been gained at any sacrifice of weight, so material a consideration with the poulterer and his customers. Cockerels exceeding ten pounds, and pullets weighing down the scale at eight pounds, having been no very uncommon productions.

The black and mottled-breasted Grey Dorkings, in their various shades, have generally headed the list of awards, and the Pencilled, Spangled, Golden, Red-Speckled, and Cuckoo sub-varieties have been by no means dangerous competitors to the former. It might, indeed, have been wished that the red birds in particular, of which there is more than one good strain, had been more encouraged, for they are remarkably handsome-feathered birds, and they are, moreover, well spoken of in respect of vigour of constitution. The Cuckoos, also, are often extremely compact, though, perhaps, somewhat deficient in size. Several of these latter have appeared at exhibitions, in the class for "any other distinct breed," while every evidence of real Dorking blood was present. The "*Cuckoo fowl*," indeed, is an erroneous designation when applied in this manner, being simply the distinction of colour, which is often assumed by fowls of various separate families; thus we have Cuckoo Dorkings, Cuckoo Polands, Cuckoo Game-fowls, and, a little-to-be-desired sport, Cuckoo Shanghaes, all of which should, of course, appear with their respective families.

As in Dorkings, almost every colour (black and white alone excepted) may be produced from the same parents, so, also, in respect of comb, which may appear in its double or single formation in chickens from the same birds. The same laxity, therefore, should be observed on this point as with plumage, more especially in a case like the present, where the supply of the table is the main object to be kept in view; for to judge these birds by the same arbitrary standard applied to the fowls bred with especial reference to feather, such as Bantams, Polish, and the Hamburgs, would be most unwise. The comb, whether single or double, if good of its kind, will make no difference in the award; individual opinion or fancy may, indeed, give a preference, but no judge should lay greater stress on one than the other. It has been sometimes said, that the double-combed are, on an average, the heaviest birds, but it is but fair to add, that authorities of equal experience are found to hold to the contrary opinion. The "*old original*" Dorking seems to have been a single-combed bird, and the double-comb, with the uncertainty of colour, as, also, in many cases of the fifth toe, may cast suspicions on the primitive ancestral position of the coloured Dorking of the present day, to which its delicate constitution, and the constant necessity for the introduction of fresh blood, may be regarded as adding weight; but this is not the fit place for the discussion of that knotty point. The coloured Dorking pens, we should notice, are constantly ill-matched in respect of colour, even to an extent beyond what the natural difficulty already mentioned is sufficient to justify, and many a prize has, doubtless, been thus lost.

In White Dorkings, the past year has seen little, if any, improvement; their smaller size, their alleged greater delicacy in rearing (in which, however, the writer of these notes does not concur), are points which induce a preference to their coloured relations. Good specimens, however, have been shown on various occasions, but even

these have not been such as to justify a belief that they have shown an improvement on former years. Many of their pens have been disqualified by blue, or otherwise discoloured legs, and the single-combed specimens, to some of which prizes have been awarded, had, in many eyes, no title to that distinction, the double comb appearing in every way to become the White Dorking.

It is singular that 1853 should have witnessed this great change for the better in the Dorking fowl; since, for very many seasons, no more fatal period has been known to their breeders. Young and old, but the former more especially, have died under every possible condition of climate and management. That under circumstances so unfavourable, Dorkings should have been able to emerge from the rack, and secure a good place among the first ranks of their most favoured competitors, argues great intrinsic merit on their part, and warrants the expectation that even more may be anticipated. Fifty guineas have lately been paid for a single pen of Coloured Dorkings, and the same sum refused on more than one occasion; and Captain Hornby finds no difficulty in parting with his surplus stock, even at as high a rate as five guineas per bird. So remarkable an increase in value becomes still more striking when it is remembered, that although Shanghaes have frequently gone beyond these sums, they were recent introductions, carrying with them the charm of novelty and fashion, in addition to their own real good qualities; but with Dorkings the case was different; both the name, and the bird itself, in many degrees of merit, were familiar to us, and highly commended as it was for the table, any such commanding position in the annals of the poultry world was never thought of; and had the probability of their attaining their present value ever been alluded to, a mania, even more absurd than that of the Shanghaes, would have been assigned as the motive of so absurd a conjecture.

The south-western counties of England are generally deficient in the coloured Dorkings; and when really good birds are there shown they are generally but visitors from other districts. The Reigate Exhibition would have reasonably been regarded with great interest by the Dorking breeder, as likely to produce the best specimens from the very head-quarters of the family; but, if we remember rightly, the limitation of the exhibitors to those resident within a given distance of that town tarnished the laurels that were there won. Gloucester and Birmingham, indeed, have proved that the Sussex air is not essential to the Dorking's well-doing; and another season, if this county and Surrey desire to retain the celebrity in this class of fowls, gained in former times, and so long creditably sustained, the lists must be thrown open, and the competition of England invited.

HARDY BORDER PLANTS.

ACONITUM OCHROLEUCUM.

THE GREAT PALE YELLOW WOLFSEANE.

THIS is one of the largest of the hardy border plants we have, and a noble plant it is when in bloom, and so very suitable for plantations where a few or many kinds of hardy herbaceous plants are planted by those who are anxious to have as great variety as possible in a limited space. As I have said before, this is a grand plant for such places, or for a centre or back-row plant to marginal borders to flower gardens, such as Mr. Beaton so frequently speaks of, recommending the marginal borders to be filled with hardy herbaceous plants, and the centre beds with bedding plants; and such borders can be filled with a choice selection of these beauties, to be quite as interesting, if not more so, as the centre beds are which are each filled with one kind and colour. Whatever kinds of hardy plants were used to fill one of such beds, the same might be used to fill the corresponding bed on the opposite side; or if not precisely the same kinds, such plants should be used that would flower at the same season, and be of the same colour and height; but the best effect will be produced by using the same kinds of plants.

A. ochroleucum is a very strong grower, but not a rapid spreader, its crown being very compact, and its roots all

fibrous, which extend round its crown for a considerable distance. It is readily increased by division in the spring months, if such be required, or it may remain in the same spots for almost any number of years without becoming straggling or tiring of its situation, if its roots are not cut and chopped about at the times when the borders are being dressed off. At those times, rather place a spadeful of nice fresh earth over and round about its crowns, after weeds, &c. are cleared away. This kind, like all the others of its family, dies entirely down during the winter months.

Its leaves are all deeply lobed, and its segments coarsely notched and pointed. The stems rise from four to even seven feet high, according to the strength of the plant and the soil and situation it is growing in. Its stalks put out an abundance of side-shoots or branches, which all form panicle-like spikes of flowers, which are of a palish yellow colour, forming, upon the whole, a very striking plant, though not so pretty as the *versicolor* and others. It flowers from the beginning of June to the middle or end of August. It is a native of Caucasus, and introduced to this in country 1794.

T. W.

TO CORRESPONDENTS.

. We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

FEEDING IMPRISONED PHEASANTS.—"A. B. wishes to know the best food for common Pheasants. She has had a house put up for them, a wooden shed, with a large outside court composed of wood and wire netting, both house and court being well gravelled; to this they are, of course, always confined. In the court, Spruce Fir-trees are planted for shelter. The court is on a sloping bank, facing nearly south, and well sheltered from north and west winds. The Pheasants are fed every day with oatmeal and water (made of the consistency that it crumbles when thrown down), crumbs of bread, oats, two or three potatoes, worms, cabbages, and turnip-tops, and fresh water every day; but with all this care, three of the Pheasants, a cock and two hens, have died in the last month. In the Pheasantry there are still nine hens and two cocks. Would one cock be sufficient to keep? The Pheasants that died were fat, nicely fed birds, and showed no sign of illness till just before they died; nor was there any mark on them as if injured by vermin, except on one of the hens, where the skin on the back was torn on one place, but it seemed as if the other birds had done it." Not trusting to our own judgment, we sought information from a first authority, and this is the reply:—"I send you what one of our keeper's says; but I believe I know as much about Tame Pheasants as any body, and my notion is, that 'A. B.' is taking too much care of her Pheasants, and that the complaint of which they have died is *over feeding*. I recommend her to stop the oatmeal *entirely*, giving them Indian corn, barley, oats, (wheat occasionally, but not at the present prices), mixed up with chaff, or straw, so that they may not be able to gobble it all up at once, but have to scratch and find it; at the same time, this would serve to *amuse* them. Pheasants are great gluttons when their food is handy, and they have no trouble in looking for it. I have a cock Pheasant now in my hall, who I saw eat till he died of *repletion*; I saw this. Probably your correspondent, had she examined their stomachs, would have found them choked with fat. I would substitute some turf in part of the court instead of the gravel. Let them also have some lime to peck at, and some cabbage leaves every day. I do not think a cock ought to serve more than five or six hens, and I should be inclined to put one cock and four hens together, and one cock and five hens, so as to prevent the chance of the two cocks fighting. If this Pheasantry is where other *Wild Pheasants* are it is well to have the *top* of the enclosure open, so that the wild cocks may come in and pay their respects to the hens. I have often watched them at this. The inmates have, of course, one wing clipped to prevent their flight." The gamekeeper's note is as follows:—"I cannot conceive the death of the Pheasants was occasioned at all by the food; on the contrary, I think they were taken the best of care of *that way*. I should have preferred, in lieu of the oatmeal and water, *whole corn* and a *diversity* of it; but as the time is coming for laying, care should be taken they are not too fat. A portion of bran with the meal (or any other), warm best would be substituted. As to the number of cocks, I should say, decidedly, three hens to one cock; and now they should be penned off, as the cocks will fight and cause the hens to fly and dash about. Should 'A. B.' detect any more dead, the best plan would be to have them *most carefully* plucked of their feathers, and see if there is no injury on them, as it is astonishing what a small blow will kill a Pheasant, and more particularly if on the head, which they are subject to in a mew, and is difficult to detect unless denuded of the feathers. Another hint, too, is worth naming, and that is, what sort of netting is over the *top* of the place of confinement?"

BROWNED ARAUCARIA (A. M.).—It is as natural for Cryptomerias, Arbor Vitæ, Cypressess, and many other Conifers, to be *browned* by cold winds, and on calcareous soils, as it is for them to grow upwards; and it is not at all curious that such an unnatural, unpractical, and unscientific way as turning out an Araucaria from a pot, with the ball entire, at the beginning of winter, should cause it to brown. It was a most ungardening way of planting Araucarias. We have often heard of them and of others being planted in their balls, and we have seen them screwed right out of the ground in consequence, but we do not recollect

of ever hearing of any one turning out valuable pot plants at the "beginning of December!" Yet, if the leaves are only browned, and we think that is all the extent of the damage, they will all come right again; but if they are killed, there is no remedy. Try them, here and there, with the point of a knife, and you can easily see if there is life in them. These Araucarias require no covering from the severest frost we experience in this country. They are perfectly hardy, and coddling only hurts them.

COVER FOR GAME (F. W. M. B.).—It is bad practice to head down any tree, and much more so a Spruce-tree, in a game cover. Spruce-trees, sixty feet high and twenty feet apart, the branches just meeting, make the finest game cover we know of anywhere. "Low grounds," if they are at all damp or boggy, must first be planted with trees sure to grow on such soils, as Alders, Poplars, Willows, and Ash, in the way pointed out the other day by Mr. Appleby. Then fill up between the trees with one-half young Privet, the rest with Black Thorn or Sloe-bush, &c., common Hazel, or wild Nut-trees. All these will grow in the wettest soils, and will make an impenetrable cover; but low ground is not at all the right place for game, except snipes and woodcocks.

QUERY (Fitzgerald).—Your description would be referable to a Silver-pencilled Hamburg cock; but we must add, that to name either fowls or plants without seeing the specimens is always an unsatisfactory task.—W.

LIME-ASH FOR POULTRY-HOUSE FLOOR (J. T.).—The lime-ash floor is composed of one-third part refuse lime from the bottom of the kiln, containing a considerable portion of ashes, the remaining two-thirds being what is termed in Cornwall, "*skimpings*," a kind of slaty spar, broken very fine. These are mixed together with the necessary portion of water to wet the lime, and then laid down, being constantly beaten till dry. A far better floor, however, is now made, by mixing together one-third of lime (the best grey and the common, in equal quantities), and two-thirds of the very small pebbles from the shore; this latter is an excellent material for poultry-house floors.—W.

SPANISH COCK (Ibid).—Red is always objectionable on the face of a Spanish fowl, the object of the breeder being a perfect white face. In reference to your question about the price of eggs, you had better apply to Captain Hornby, Knowsley Cottage, near Prescot.—W.

GAME FOWLS (Ibid).—It will not pay to keep Game fowls in confinement, their habits requiring a wide range.—W.

GRAPES FOR VINERY (C. T. J.).—For your Vinery, 15 feet by 12 feet, one West's St. Peter, one Royal Muscadine, and two Black Hambro's, we should plant in your case, and in the order we have placed them,—the St. Peter's at the hottest end. We should be very jealous of a four-foot deep border, unless above the ground level. Plants two years old will be proper, planted in the end of March, the balls of earth unloosed. As to *Climbers*, that is a matter of taste, or fancy, rather; they are numerous, and any respectable nurseryman will safely advise you also as to what plants to cultivate. Our worthy coadjutor, Mr. Fish, in his back papers, has advised about all these things. Your hen Pheasant will, no doubt, "fraternise" with your fowls if you can keep her from "bolting." As to food, see among answers "to correspondents" to-day.

GRAPES FOR VINERY (A. B. C.).—Your Vinery is 36 feet by 18 feet. Perhaps you have about nine rafters, but you have not stated. If so, plant as follows:—One Muscadine, or Sweetwater, one Muscat, one Barbarossa, two St. Peter's, four Black Hambro's. Plant in the order they stand here, beginning at the hottest end with the Muscadine. About your Orchard-house, all depends on whether you understand how to manage the trees. The construction of the house appears good.

THE PEACOCK IRIS (A. R.).—You are quite right. Mr. Appleby has correctly described *Viesseuxia glaucopsis*, but inadvertently called it *Iris pavonia*. Mr. Beaton says,—"The Peacock Iris of the seed-shops is the true *Viesseuxia glaucopsis*. A very light blue flower, with a whitish eye or spot at the bottom. *Viesseuxia pavonia*, or *Iris pavonia*, of Linnaeus, is quite a different plant; a largish white flower, with the most intensely shaded blue spot at the bottom of each petal, like the spot in the tail feather of the Peacock. I had it twice from the late Mr. Young, of Taunton, and you could buy it for 1s 6d, in the London seed shops, twenty years since, but I believe it is now lost to the country. Mr. Carter, of Holborn, is the most likely person to have it. I said, in THE COTTAGE GARDENER, that both kinds were to be had in the seed-shops.—Vol. X, page 441. Mackay (Lows), of Clapton; Colville, Young, of Taunton; and Wheeler, of Warminster; with Young, of Epsom, had it, I believe, when I was a bulb-grower in Herefordshire, from 1829 to 1837; since that time I lost sight of many of them."

DRESSING FOR TREES IN ORCHARD-HOUSES (R. Edwards).—1 lb. flowers of sulphur, $\frac{1}{2}$ lb. soft soap, $\frac{1}{2}$ lb. ground black pepper, boiled for twenty minutes in four gallons of water. If necessary, add enough clay to render it as thick as paint. Apply it, when cool, by the aid of a painter's brush. It must be put on before the buds have opened. Give plenty of air during the day, and moist air at night, to keep away the Red Spider.

SUPER-PHOSPHATE OF LIME (W. W.).—We cannot tell what is the composition of the powder from the Bone Charcoal Works. It will do to make the super-phosphate if it contains the phosphate of lime portion of bones. A handful of super-phosphate, once a-year, in the spring, will be quite enough for one Rose-tree.

SOFT EGGS (J. B. N.).—If you refer to the Indexes of last year you will find abundant information on the subject. It arises, probably, from inflammation of the egg passages. Give each hen one grain of calomel and one-twelfth of a grain of tartar emetic. Feed with soft food only for a few days.

ECONOMICAL BREAD.—R. P. H. says,—"In reply to S. E. J., in your number of Jan. 26, I enclose the accompanying receipt, which is now being used by a friend, whence I have to-day returned, and I can state that the semi-rice bread we had at breakfast was excellent, as was also another baking I partook of at the same house last week. 1½ lbs of whole rice, set in a jar, with plenty of water, to simmer all night; any water remaining in the morning to be strained off, and the rice well beaten into a paste. This paste is to be added to the bread *after it has risen*, and well kneaded in. 1½ lbs. of rice will do, and 14 lbs. of flour."

TURPENTINE FOR GAPES (Lucy).—Mr. Tegetmeier gave full directions in our last volume. Shut up the fowl in a box with some spirit of turpentine poured upon a very hot plate, so that it must inhale the fumes of the turpentine. Do not suffocate the bird, and repeat the application daily until the gaping ceases.

DUCKS NOT LAYING (Q.).—Are they old birds? Whether old or young, common Ducks rarely lay in winter unless they are very liberally fed. The Aylesbury and Rouen, however, lay in the autumn.

RICE MEAL (T. L.).—We do not know what are its fattening qualities. Have any of our readers used it for feeding pigs? We will answer the other queries next week.

EMIGRATION (A Young Gardener).—Do you seriously say that £16 is too much for carrying you and your baggage half round the world, and feeding you, running all risks, interest for capital sunk in the ship, &c. Government aid highly recommended applicants. Full information may be obtained at the Emigration Office, in London.

COLLODION, FOR CUTTINGS (E. C. J.).—This is Gun Cotton dissolved in ether. Mr. Low, in a recent communication to the Royal Society, says he found it most beneficial to dip the cut end of each cutting, whilst dry, into the Colloidon. It keeps out excess of moisture. Of 131 cuttings so treated, 86 rooted, whilst of 131 without the Colloidon plaster only 42 rooted. The experiments were tried upon Stove, Greenhouse, and Hardy plants. Gutta Percha dissolved in naphtha would probably answer the same purpose.

OAK SLABS FOR PAKK PALINGS.—M. G. says—"I want them five feet high and three-quarters-of-an inch thick. Where can I procure them? Have seen them near Mr. Fish's. I am now in Ireland." We presume you will have no difficulty in getting them from the nearest oak forest where they are falling timber. Choose it of the straightest grain, and not over old. If the stick should be twelve to eighteen inches through, split it with beetle and wedges into four parts, and then rend your slabs in feather-edged style, from one inch on one side to half-an inch or less on the other. They then lap over each other, which is generally the way they are put up. After rending, they will want a little dressing with a sharp axe, to make them more equal, and to remove the sap-wood. Such fences will last a very long time. Many make them decay by daubing them with paint, or tar, while in a green, unseasoned state, thus doing something more than having their trouble and expense for nothing.

GERANIUM-LEAVES SPOTTED (M. L.).—It strikes us that your plants have got the spot, from cold and damp; and if the age of the leaves does not deceive us, the frost has also paid them a visit. You did right in removing the worst at once, and, most likely, all will have to go; though, to keep the plants alive, you had better do so by degrees. A higher temperature, say 50° to 55°, and plenty of air in suitable weather, will restore them if not too far gone, but it is not easily got rid of, as it becomes constitutional if let alone. We cannot say anything as to your supposed reasons; for though your writing seems admirable at first sight, and many words are extremely plain, there are others which, after repeated trials, we have been unable to decipher so as to make sense out of them.

SELECT LISTS OF GREENHOUSE PLANTS (S. O.).—We think Mr. Appleby promised a list some time ago. Such lists have often been given, and will, no doubt, be repeated to please you, though they seem the driest and most useless things we have had to do with. Do we quite understand you that the "more select the list, the better it will be," when the chief reason you assign for obtaining it, is the severe winter having killed so many of the plants usually grown in Peaches and Vineries? Did you want a list for a definite purpose we would at once endeavour to supply you, though we repeated an old tale to old readers. Very select greenhouse plants are rather more easily lost than those usually kept in Vineries, &c.

BEES REJECTING FOOD (Honey Bee).—Your hives that refuse to take the food given them, are, in all probability, not in need of it; but the weight will decide. We would, at any rate, induce them by some means to take the food. Feed the other hives liberally; give them at least two pounds per week. Send a stamped directed envelope to J. H. Payne, Esq., Bury St. Edmunds, and some seed of *Leucantha* will be inclosed to you.

GOLDEN PHEASANTS (F. W.).—For hatching and rearing these employ Bantams, or a small breed of White Silk Fowls. The latter are not to be surpassed for this purpose.—W.

PULLET DYING ON NEST (E.).—The pullet forwarded died of apoplexy, the predisposing cause being extreme fatness; a dietary consisting in great part of Indian corn meal, and pea meal, &c., is far too fattening and stimulating for fowls kept in an aviary. Indian corn contains, on the average, three times as much fatty material as barley, and is not, therefore, if given abundantly, a good food for laying hens, especially as it is not very rich in those flesh-forming materials out of which eggs are formed.—W. B. TEGETMEIER.

Hogg's EDGING TILES (An Amateur).—We have received a report from Mr. G. Townsend, of Fordham, Cambridgeshire, in which he states that Hogg's Edging Tiles, which were laid down in September last, "are as sound, after having endured the late severe frost, as the day they were first put down." Those which were placed in "the Society's Garden" were of a different construction, and manufactured of a different description of clay from those which are referred to above.

CALENDAR FOR MARCH.

FLOWER-GARDEN.

ANNUALS (Tender), such as the *Portulacæ*, *Mesembryanthemums*, *Lobelia*, &c., sow, b.; (**Hardy**), sow on dry borders, b. and c.; finish transplanting autumn-sown annuals. **BIENNIALS**, sow, c. **CLIMBERS**,

half-hardy, as *Maurandya*, *Lophospermum*, &c., pot and train, b., to have strong for next May planting. **CUTTINGS**; push on the propagation of cuttings, and transplant them as fast as they root. **CUTTINGS** from *Rose* prunings, plant in the shade. **DAHLIAS**, sow, and force old roots for stock, b. **DAESS** every part within the boundary as early as you can. **EDGINGS** of all sorts finish off as early as possible. All **EVERGREENS** transplanted since last August may have liquid-manure this month, and throughout the season after this mild winter. **FLOWERS**, pick off from plants you want cuttings from, b. Finish all the **PLANTING** and **SPRING PRUNING** of trees and shrubs, and all necessary alterations, as soon as the weather will permit. **GRASS**, and white and small yellow **CLOVER SEED**, sow with a liberal hand over patchy grass; keep the grass in clean, trim order, and roll it three times this month, and oftener if you can. **GRAVEL**, clean, roll, and relay. **HAND-GLASSES** are the best of all aids to rear half-hardy, and such other annuals as come up weakly at first; place them on a warm sheltered aspect. **HOKING**: never hoe a border in March, for fear of killing something which you cannot see. **HOTBEDS** are only good helps to those who can well manage them for the flower-garden; keep them up to 70°, and steady. **HYACINTHS**, and other **BULBS**, as soon as they appear, stir the beds, and lighten the soil round the plants; and plant spring **GLADIOLI** at once. **PERENNIALS**, with the exception of long fleshy-rooted ones, ought to be removed—divided, if necessary—and receive some fresh soil, or be planted in new situations, at least every third season; see to this rule, and treat one-third of each family, every February and March, according to it. **PROTECTION** is necessary for almost all young things of a tender nature this month. **RAKES**, lock them up, b.; if your man cannot dress a border without a rake, tell him he must learn. **ROSES**, finish pruning, b., except, perhaps, a few strong ones may be left unpruned till April, to bloom later; but this plan is radically bad and not necessary now with our perpetuals. **SEEDS**, do not sow a packet of rare seeds in one pot only, sow in two or three pots, to provide against accident to one. **SEEDLINGS** in heat, transplant as soon as you can handle them. **STAKES**; see if you have a stock on hand for your *Dahlia*s, *Hollyhocks*, and all other plants requiring them next summer, and see that all the old ties and rotten stakes are out of the rosary. **SWEET BRIAR**, sown in a single row, will grow and make a hedge in such poor soil as would kill other roses. **TURF**, lay. D. BEATON.

FRUIT-FORCING.

AIR, increase as forcing proceeds. **APHIDES**, destroy. **CUCUMBERS**, in forcing-house, apply liquid-manure, train and stop when long enough; in frames, turn and remove linings weekly, stop frequently; temp, 63° to 75°. **CHERRIES**, use moderation; keep a humid air; temp., 50° to 60°, artificial heat; ventilate freely. **FIGS**, much as *Peaches*; keep the root moist; bottom warmth benefits them. **LIQUID MANURE**, apply to active growths where strength is required. **LEAVES** of all fruits keep clean. **MOISTURE (AIR)**, supply liberally; root moisture regularly, but according to need. **MILDEW**, beware of; see *Sulphur*. **PEACHES** and **NECTARINES**, keep a free atmosphere; disbud and train; temp., 55° night, 65° to 70° day. **PINES**, liberal heat and moisture to rising or swelling fruit; successions, re-arrange and increase temperature. **RED SPIDER**, see *Sulphur*. **STRAWBERRIES**, introduce successions, water liberally, keep near the air and light. **MELONS**, bottom-heat 75° to 80°, air-heat 70° to 80°; thin the Vine well. **SULPHUR**, apply at least monthly in all structures. **TEMPERATURE**, allow 8° or 10° advance in heat during sunshine. **VERMIN**, entrap. **VINES**, early-train, stop, thin berries, tie shoulders; do not forget the sulphur. **WATERING**, attend to daily. R. ERRINGTON.

FRUIT-GARDEN.

APRICOTS, protect: search for the eggs of the Red-bar Moth, like parsnip seeds, and dotted. **APPLES**, cleanse, brine and soft soap, succeeded by spirits of turpentine in the retreats of the American blight. **BLOSSOMS**, retard and protect. **BUSH FRUIT**, still plant or top-dress. **FIGS**, uncover, prune at end. **GRAFTING**, proceed with. **HOKING**, practice on foul borders. **NUTS**, hang male catkins among the female blossoms. **PLANTING** of all kinds instantly bring to a close. **PEACHES** and **NECTARINES**, finish training, retard and protect; dress the walls with sulphur paint. **RASPBERRIES**, still plant, prune, stake, and top-dress. **ROOT-PRUNING** may still be done. **SUCKERS**, destroy. **STRAWBERRIES**, spring-dress; transplant. **STANDARDS**, stake. **STOCKS**, plant or sow seeds. **TRELLISES**, dress and protect. **VINES**, plant at end. **WALNUTS** may be planted still. In *grafting*, proceed according to the degree of development of the bud, taking each kind the moment the buds actually begin to expand. R. ERRINGTON.

GREENHOUSE.

AIR, admit in fine weather, when the outside temperature is above 35°; a shut house is better than cold currents and night fires; in foggy weather, however, light a fire, to clear and dry the atmosphere. **BULBS** and **TUBEROUS** roots, introduce, and water more freely; start the various kinds of *Achimenes*, *Gesnera*, and *Gloxinia*, in hotbed; seeds of the latter, sown now, will give nice little flowering plants for the autumn and winter, if you can give them heat. **CALCEOLARIAS** and **CINERARIAS**, water more freely; give manure water to those flowering and showing their flower-stalks; shade in sunny weather; shift for succession **CAMELLIAS** and **AZALEAS**, water more plentifully when in bloom; keep those intended for late blooming as cool and shaded as possible, so that frost does not injure them. **DIOSMA**, **EPACRIS**, **HEATHS**, give abundance of air when growing and flowering; Prune freely when done flowering, and keep close until they begin to grow, when the roots had better be examined. Now and afterwards, for a couple of months, will be a good time for inserting cuttings. **HABROTHAMNUS ELEGANS** is now a pretty object, grown in a pot, or trained against a pillar. **HOTBEDS**, prepare for sowing *Primula* seeds, and any other desirable greenhouse plants, raising cuttings, sowing seeds, or striking cuttings of the commoner sorts for stocks on which to inarch or graft *Correns*, *Oranges*, *Camellias*, &c.; the grafting of such plants is easily effected in such a sweet, moist hotbed, and does away with much of the trouble of inarch-

ing. Such a bed will, also, be necessary for starting Cockscombs and Balsams, &c. Strong, early, winter-flowering PRIMULAS should be sown the end of this month; and CINERARIAS intended for the same purpose the month following. INSECTS, destroy. LEAVES and STEMS, clean; a little soap and water is a great auxiliary for removing all kinds of filth; syringe with clean water afterwards. LILIES, JAPAN, after the stems appear, place in a light, airy situation. MIGNONETTE, and tender annuals, sow in slight hotbeds, in pots, turf, &c., to be afterwards hardened off. SOIL, prepare, turn, and expose for a general shifting about the end of the month; but do not knock about fresh soil intended for potting so as to shake the fibre out of it. PRIMULA SINENSIS will be greatly benefited by manure-water. The double varieties are well worth a little extra attention, as the flowers stand a long time in a bouquet. TRAIN large plants of PELARGONIUMS intended for early flowering; STOP those for late summer and autumn. SCARLET GERANIUMS, intended for specimens in pots, give good shifts to, and if they can get a little bottom-heat they will come all the stronger and bloom the finer. Tie climbers to rafters, after duly pruning them, keeping in mind whether the flowers are produced on young or old wood; train daily those on trellises; and, as the season is now getting on, let neatness, order, and cleanliness, everywhere prevail. WATERING will now be more wanted, and a moistish atmosphere in clear weather, to counteract the drying effects of east winds. SYRINGING the leaves with tepid water, after a sunny day, is as good for a plant as soap and water is for our own skins. Unless in extreme cases fire-heat will not be so much wanted. Old Scarlet Geraniums, stored past, should now be brought into the light, top-dressed, &c.

R. FISH.

ORCHID HOUSE.

ARRIDES, and other similar Indian plants, will this month be growing rapidly; give them fresh sphagnum, if in wire baskets; if in wooden ones, renew them, and bring the roots within the baskets amongst the fresh sphagnum. AIR, give more abundantly as the days lengthen, and the sun obtains more power. BLOCKS.—The plants on these must be syringed twice a-day at least, as they will now be growing rapidly. BASKETS.—Dip these in the cistern twice a-week; if very dry, allow them to remain in the water an hour or so, till the hard lumps of peat are thoroughly wetted. BARBERIAS, set to work, by giving water freely. Pot CATASSETUMS, CYCNOCHORS, and other similar-habited plants; they will now be growing. DENDROBES, see last month. Such as are in flower remove, if possible, to a cooler house; they will then last much longer in bloom; those growing repot. HEAT, towards the end of the month bring up to the maximum. *Indian House*, 80° to 85° by day, 70° by night, *Mexican House*, 70° to 75° by day, 60° by night. The highest heat to be when the sun shines. INSECTS, keep a watchful eye upon, and destroy the moment they are perceived. MOISTURE IN THE AIR, keep up a large amount of, by keeping the walks, platforms, and walls frequently flooded. POTTING, proceed with, and finish before the end of the month. Now is the time to increase orchids, by division or otherwise. SHADING.—About the middle of the month place the shades upon the roof, to be ready for use, as the sun will soon be so powerful as to be dangerous. STANHOPEAS, now growing, put in fresh compost in large baskets. STEAM, where possible, admit amongst the plants. WATERING AT THE ROOT must now be regularly given, but care taken that it does not lodge upon the leaves or in the hollow of the young shoots.

T. APPELEY.

PLANT STOVE.

ACHIMENES advancing in growth, give water to, but do not flood them in this early season; repot such as have filled their pots with roots; pot a batch to succeed the former ones. AIR, give now freely in mild weather; take care the apertures for the admission of air are not directly opposite the plants, it is best to come over the pipes or flues, to be heated before it reaches the plants. AMARYLLIS AULICA, and varieties, repot, and place in heat. APHELANDEAS, repot. BASKETS. Place in these *Eschynanthus*, *Achimenes*, some *Lycopodiums*, and other hanging-down plants; they ornament the stove greatly. There are some baskets, made of coloured glass, that are very ornamental objects filled with proper plants. CLIMBERS will now be growing fast; attend to training and thinning shoots; in pots place fresh trellises to, and keep the plants constantly trained around them. CUTTINGS continue to put in; pot off such as have rooted. HEAT, increase to 70° by day, 60° by night; winter-blooming plants gone out of bloom cut in severely, and place in a cool house to rest. IXORAS, repot, stop, and tie out; place them in a frame heated with dung; here they grow rapidly and soon make fine plants. INSECTS, continue to watch for and destroy. POTTING, finish the spring, by the end of the month. SYRINGE freely morning and evening, and keep the paths flooded in sunshine. WATER will now be required in large quantities to fast growing plants. Let the walks be frequently washed out, and every yellow leaf removed, every plant neatly tied, and decaying flowers removed as they occur.

T. APPELEY.

FLORISTS' FLOWERS.

ANEMONES, double, protect from frost. AUCULICAS and POLYANTHUSES will now be showing their flower-stems. In this stage they will require constant attention. Top-dressing, if not done, must be finished the first week; water regularly in pretty liberal quantities; if allowed to flag now the blooms will be small. Give plenty of air daily, and shade from bright sun towards the end of the month; cover up securely at night whenever there is the least appearance of frost; sow seed, and pot last year's small seedlings to encourage growth. CALCEOLARIAS, repot, prick out seedlings, give plenty of air to, and smoke frequently with tobacco. CARNATIONS and PICOTEES, put into their blooming pots. Search the soil over minutely to find wireworms, and destroy them previously to using. Place them when potted upon a bed of coal-ashes, with a convenience of hoops and mats to shelter them from severe weather. Should mildew appear, dust with sulphur; and destroy green fly with tobacco-water or Scotch snuff. CINERARIAS finish potting, b.; smoke frequently to destroy every green

fly soon as it appears; water freely, and shade from bright sun as the flowers open. CHRYSANTHEMUMS pot off into small pots and repot, b. in a size larger. DAILIAS, all intended to be potted should now be done; pot off cuttings as soon as rooted, and put in more cuttings if required. Divide the old roots, leaving a bud or two to each division; place each division in a pot, and allow them to grow slowly till planting time; a cold frame, well protected from frost, will be shelter enough for them. FUCHSIAS, repot; cuttings may yet be put in. Begin to train early, in order to form well-shaped plants. HYACINTHS; tie the flower-stems to sticks, to prevent the winds from breaking them off; continue to shelter the bed by hoops and mats. HOLLYHOCKS, plant out where they are to bloom; place a mulch of short litter round each plant. PANSIES, top-dress; in pots, lay down the shoots round the plant, cut the stems half through to induce roots; shelter from heavy rains and severe frosts. PELARGONIUMS, pot young plants; top-dress old ones, and tie out to form large, spreading specimens; smoke frequently, to destroy green fly; when the flower buds appear, give liquid-manure every third time watering. PINKS, top-dress, b., if not done last month. RANUNCULUSES may yet be planted, b.; shelter the bed from heavy rain, frost, hail, or snow. TULIPS will now be growing fast; shelter the young plants from heavy rain, or other severe weather; if rain falls during the day, and a sharp frost intervenes at night, and no protection is given, the young leaves will be much injured. VERBENAS, in pots for exhibition, repot, tie out, and nip off the tops of the shoots; shelter both these and those intended to plant out from frost; smoke frequently to keep down green fly, and syringe occasionally with sulphur-water to destroy or prevent the red spider; put in cuttings of scarce sorts; sow seed; look for slugs constantly in the frames under the pots, or any other lurking place, and destroy them. Finish planting ROSES, and place those in pots in a warm house, to be coming on for the June or July exhibitions.

T. APPELEY.

KITCHEN-GARDEN.

THIS is a busy month—every day brings its work; a favourable opportunity should never be lost for doing any particular kind of work; take advantage of open mild weather for every kind of planting; in taking up transplanted plants from nursery beds of any kind, or at any time, always lift them up with some kind of tool or other, as a plant thus transplanted always suffers so much less than a plant drawn from the seed-bed. ANGELICA, sow, or plant, e., autumn-sown. ALEXANDERS, sow, m. or e. ASPARAGUS, sow or plant, e.; and dress off out-door beds; attend to that in forcing, water with liquid-manure once a week. ARTICHOKE and BALM, plant. BASIL, sow a little for early use. BEANS, plant; and earth-stir growing crops. BEET (Red), sow a little for early use. BORAGE, sow, and earth-stir autumn-sown, and thin out. BORECOLE, sow, m. BROCCOLI, sow a little of the early kinds, and mark any favorite kinds for seed. BURNET, plant or sow. CABBAGES.—Any early kinds may be sown, or *Red Dutch*, should plants be wanted. CAPSICUMS, sow, to forward in hotbed, b. CARDOONS, sow, e., for first crop. CARRAWAY, sow. CARROTS, sow for early crops; attend to thinning-out those in growth, and earth-stirring; sowings of the Early Horn may still be made on gentle hotbeds. CAULIFLOWERS, plant out the winter-protected; attend to spring-sows, as to airing, pricking-out, and earth-stirring; also assist the early hand-glass crop with soakings of liquid-manure, &c.; and sow in succession, e. CELERIAC, sow. CELERY, sow main crop, m., and prick out early-sown on gentle hotbed; leave for seed. CHAMOMILE, plant. CHERVIL, sow; save seed from autumn sown. CHIVES may be divided, and planted out. CLARY, sow, e. CRESS (American), sow. COMPOSTS, prepare. CORIANDER, sow. CORN SALAD, sow. CUCUMBERS, ridge out; pot off; or sow in succession; sow also toward the middle of the month, for planting-out under the hand-glasses next month; attend to those in bearing; keep up a good moist heat. DILL, sow or plant. EARTH-STIRRING, attend to in all cases, and often. FENNEL, sow or plant. GARLIC, finish planting. HOEING, attend to in dry days. HOREHOUND, plant or sow. HORSEBADISH, finish planting. HYSSOP, sow, or take up and divide old roots. JERUSALEM ARTICHOKE, finish planting. KIDNEY-BEANS, sow in succession; attend to those in bearing, assist them with liquid-manure. LEES, sow. LETTUCES, sow; prick out; and plant out. MARIGOLD, sow. SWEET or KNOTTED MARJORAM, sow a little for early use. MARJORAM (Common Garden), divide and plant out. MELONS, sow in succession, and ridge out; attend to earthing-up, training, &c., the early crops. MINT, plant. MUSHROOM-BEDS, make, and attend to; assist old beds with a little tepid manure water. MUSTARD and CRESS, sow, once or twice a week. NASTURTIUMS, sow, e. ONIONS, sow the main crop; plant for seed, b.; also finish planting the *Underground* or *Potato Onion*; also the *Tree Onion*; and look over those in the store. ORACH, sow. PARSLEY, both kinds, sow. PARSNIPS, sow, b. PEAS, sow in succession; the beginning of this month, is a good season to sow any of the tall kinds; earth-stir, or earth-up, and attend to sticking, &c. PENNYROYAL, plant. POTATOES, finish planting, either in hotbed or open quarter. RADISHES, sow in succession; attend to thinning-out young crops. RAMPIO, sow. RAPE, sow common, and edible-rooted, e. RHUBARB, sow or plant, b. ROCHAMBOLE and ROSEMARY, plant. RUE, plant. SAGE, plant. SHALLOTS, finish planting. SALSIFY and SCORZONERA, sow a little for early use. SAVOYS, sow. SEAKALE, sow or plant out; attend to early covering-up, to exclude the light from the crowns, for successional and late crops. SKIRRETS, sow, e. SUCCORY, sow. SORREL, plant or sow. SPINACH, sow in succession. TANSEY and TARRAGON, plant. THYME, sow or plant. TOMATOES, sow in hotbed, e. TURNIPS, make a small sowing two or three times during the month.

T. WEAVER

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EDWARD GEORGE HENDERSON AND SON

beg to inform their patrons and the public, that their CATALOGUE of SEEDS for 1854 is now ready, and will be forwarded, "post-free," on application.

E. G. H. and Son take this opportunity of informing their patrons, that none but the most popular and improved kind of Vegetable Seeds appear in their list; and among the Flower Seeds, only those whose beauty and merit is universally acknowledged; together with a careful selected stock of the principal New Varieties.

E. G. H. and Son beg respectfully to call particular attention to the following Choice Seeds of Florist Flowers, which they can confidently recommend as being selected from a Choice Collection of Named Flowers of extra merit; and also the annexed New Annuals:—

CHOICE FLORIST FLOWERS.

PER PACKET.

Antirrhinum, fine mixed, 4d	Geranium, fancy vars., 2s 6d & 5s
Balsam, Camellia flowered, 6d	Hollyhock, 1s
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" alba, 6d	Schizanthus retusa, 4d
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Leptosiphon luteum (new), 1s 6d	" coccinea, 1s
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" alba (new), 6d	
Maurandya elegans, superb, 6d	
Mignonette, new large flowering, 3d	
" tree, 1s	

February, 1854.

WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

SELECTED GARDEN SEEDS.—We beg to offer

	£	s.	d.
No. 1.—A complete collection, suitable for a large garden	3	0	0
2.—A collection of equally choice varieties, but smaller quantities	1	10	0
3.—A collection suitable for a small garden	0	15	0

Nos. 1 and 2 collections will be sent carriage free to any Railway Station in England or Wales.

J. C. WHEELER & SONS, Seed Merchants, Gloucester.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR

IMPROVING OLD PASTURES.—Many Old Upland Pastures, Parks, and Meadows, are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are sown early in the season, the improvement in the Pasture will be very considerable, and at a small expense.

The following is similar to many other letters received from former purchasers:—

From D. T. Cunyngame, Esq., Wellesbourne, Warwick, Nov. 1852.

"The meadows that were renovated with your Seeds are looking very well. I cut nearly 2 tons of hay to the acre, and three years ago the same land hardly produced half-a-ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 lbs. to 12 lbs. per acre. Price 1s. per lb., Carriage Free.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks. N.B.—We have a very fine Stock of Mangold Wurtzel and Carrot Seed, and other Agricultural Seeds.

RENDLE'S NEW PRICE CURRENT for 1854

should be obtained by all who have Gardens, whether small or large. It will be found to be a correct and useful Guide to the amateur and young gardener; a remembrance to the more advanced in horticulture, and a source of reference to all.

Can be obtained from the London Publishing Office, 294, STRAND; price Sixpence, or from the Proprietors, WILLIAM E. RENDLE and CO., Seed Merchants, Plymouth. ESTABLISHED 1786.

CHOICE SEEDS.—BASS & BROWN'S NEW SEED AND PLANT LIST is now complete, supplied free for three penny stamps.

FINE NEW PEAS of the last and present year's introduction.

Waite's Daniel O'Rourke, very early	s. d.	2	6	per quart
Fairhead's Nonpareil, earlier than the Champion of England, rich flavour	5	0		
Sangster's No. 1, 2½ feet, very early, prolific, and fine	2	0		
Stuart's Paradise, 4 feet, a very fine, large, long-podded marrow, three weeks before Thurston's Reliance, or other Peas of the same character	2	0		
Hairs' Defiance, 4 feet, fine, new wrinkled marrow	2	0		

The three last-mentioned were grown last season by ourselves, and we can recommend each of them as an acquisition. Sangster's No. 1 and Stuart's Paradise are included in the collection below.

BASS AND BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS.—The following comprise the best in cultivation, including several new sorts of first-rate quality:—

No. 1.—Collection for a large garden, containing 20 quarts of Peas, in 20 best sorts, and all other Vegetable Seeds in proportion, sufficient for one year's supply	£	s.	d.
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No. 3.—Collection ditto	1	5	0
No. 4.—Collection of choice kinds for a small garden	0	15	0

If any sorts of Vegetables are not wished for, enlarged quantities of others will be sent to make up the amount. Goods CARRIAGE FREE (not under 20s) to all the London Termini.

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SEEDS—Carriage Free.—WILLIAM E. RENDLE

and CO. have, from the very extensive patronage they have received, induced this season to offer the following liberal arrangement to all who purchase Seeds from their Establishment.

ALL ORDERS ABOVE £5 WILL BE DELIVERED CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND OR WALES, AND TO ANY STEAM PORT IN ENGLAND, WALES, IRELAND, OR SCOTLAND.

Two or three purchasers joining together will, therefore, have the advantage of having their orders delivered free of any cost for carriage.

RENDLE'S PRICE CURRENT for 1854 should be obtained by all who have gardens, or who take an interest in the cultivation of the soil.

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of Vegetable and Flower Seeds for the present Year is now ready, and may be had gratis. Having tested the growing qualities of his Seeds, J. S. HAYWOOD flatters himself they will be found, as usual, superior to most in quality, and cheap as any in price.

26, Broad Street, and Lower Wick Nursery, Worcester.

Established 1756.

"WHEELER'S SHORT SELECT SEED LIST."—

J. C. WHEELER & SON'S SEED LIST is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out the names of all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take special care that every sort we send out is true to name, and of the best quality.

J. C. WHEELER & SONS, Seed Merchants Gloucester.

SHRUBS, FRUIT, and FOREST TREES, SEEDS,

&c.:—Sycamore, Chesnut, Walnut-trees, 5 feet high, 3d each; Laurels, 2d each; Privet, 1d each, 4 feet high; Red, White, and Black Currants, 3 feet high, 4d each; Ilex Oak, English Yew, Cypress, Variegated Holly, Gold and Silver-leaf Euonymus, Arborvitae, Honeysuckles, Clematis, Virginian creepers, Laburnum, Lilacs, Moss and Running Roses, Berberis, Double-blossom Furze, Cotoneaster, in pots, at 6d each; Escallonia macrantha, 1s each; Standard Roses, 1s each; Flowering Almonds, 2s 6d each; Tulip Tree, 2s each; Cryptomeria japonica, 3s each; Box-edging, 4d per yard. Every other Shrub, Flower, or Tree, at equally low prices.

At W. CULLINGFORD'S, 1, Edmund-terrace, Ball's-pond-road, Islington, London. Flower and Vegetable Seeds of every kind.

PYRAMIDAL PEAR-TREES ON THE QUINCE

STOCK.—J. and J. FRASER, Nurserymen, Lea Bridge Road, Essex, beg to offer the above in fine strong Trees, and such as would fruit the first and second year after planting, at the undernamed prices. These Pears are remarkable for their compact style of growth and prolific bearing. The collection comprises the following fine sorts:—Beurré d'Amaulis, Beurré Diel, Beurré Grise d'Hiver, Nouveau, William's Bon Chretien, White Doyenne, Forelle, or Front Pear, Glout Moreau, Hacon's Incomparable, Jargonelle, Louise Bonne de Jersey, Marie Louise, and Napoleon. Price 2s 6d to 3s 6d.

January 13, 1854.

KNAP HILL NURSERY, WOKING, SURREY.—

WATERER and GODFREY, Nephews and Successors to the late HOSIA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, to 8 feet.

TO APIARIANS.—For Sale, an excellent stock

of BEES, consisting of Four Double Hives, all strong and healthy. To be had upon very moderate terms, with Feeders, Caps, &c., if required. Address, "Z," care of Mr. Lemon, Stationer, Tadlington, Middlesex.

WEEKLY CALENDAR.

M D	D W	MARCH 2—8, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
2	Th	Drassus ater; stones.	29.503—29.389	45—27	N.W.	10	46 a 6	39 a 5	9 47	3	12 25	61
3	F	Clubiona lapidicola.	30.087—29.810	40—21	N E.	—	43	41	11 1	4	12 13	62
4	S	Aranea domestica; house.	30.113—29.982	46—35	S.	0.2	41	43	morn.	5	11 59	63
5	Sun	1 SUNDAY IN LENT.	29.840—29.838	49—39	S.W.	12	39	45	0 14	6	11 46	64
6	M	Forbicina polypoda; stones.	29.897—29.882	55—44	S.W.	0.2	37	46	1 24	7	11 32	65
7	Tu	Cicindela campestris; paths.	29.937—29.917	54—34	S.W.	11	35	48	2 30	8	11 17	66
8	W	EMBER WEEK.	30.043—29.932	50—29	S.W.	0.3	33	50	3 33	9	11 3	67

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 49° and 32.2° respectively. The greatest heat, 66°, occurred on the 8th in 1826; and the lowest cold, 13°, on the 5th in 1845. During the period 122 days were fine, and on 67 rain fell.

NEW PLANTS.

CEROPEGIA THWAITESII (*Mr. Thwaites's Ceropegia*).



THE name of the genus, derived from *keros*, wax, and *pege*, a fountain, refers to the waxy appearance and form of the flower, for although in the above sketch the flowers appear unexpanded, yet they never become more opened, but retain this fountain-head form. The specific name is in honour of Mr. Thwaites, who sent the plant, in 1851, from Ceylon to Kew. They belong to the Natural Order *Asclepiads*, and to *Pentandria Digynia* of Linnæus. It is not unlike *Ceropegia bulbosa*, as we remember seeing it growing in India. It flowered at Kew in September, 1853. The plant is a twiner; the young stem and leaves are frequently tinged with red; calyx of five sepals, green tinged with red; corolla with yellow tube funnel-shaped, "very narrow below the middle, much inflated, and almost globose at the base, dilated upwards, and there sprinkled with dark, blood-red spots." The root of *C. bulbosa* is solid and eatable. It is a native of the Coromandel coast, and is called by the natives *Manchy-Mandu*.—(*Botanical Magazine*, t. 4758.)

It has been often noted that the world must be circumnavigated before a washerwoman can be comfortably at breakfast with tea and sugar in her caddy; and now it is a truth as strange, that Cape Horn must be doubled twice before Scotch farmers can excel in Wheat crops. Never was a "truth stranger than fiction" more strange than the truth, that those farmers now depend, in a great measure, for such crops, upon the manure made by sea-birds on the furthest—most western—coast of South America.

When Pizarro first conquered the country of the Incas, he found the Peruvians using that manure as a

PASSIFLORA MEDUSEA (*Medusean Passion-flower*).

Believed to be from Mexico. It is a climber, and blooms in November, when trained along the rafter of a stove. Leaves crescent-shaped, with two rows of yellow pellucid glands, from the leaf-stalk towards the concave edge of the leaf. Calyx pale yellow green; the filamentous crown pale crimson. Flowers rather small.—(*Botanical Magazine*, t. 4752.)

CIRRHOPE TALUM CORNUTUM (*Horn-bearing Cirrhopetalum*).

This Orchid is a native of the Khasya Hills of eastern Bengal, and bloomed at Kew in the September of 1853. Flowers in a radiating umbel. Upper sepals yellowish, sprinkled with purple; lower ones purplish, and united so as to resemble a horn. Odour like "that of bad glue."—(*Botanical Magazine*, t. 4753.)

COLEUS BLUMEI (*Blume's Coleus*).

This is a *Melissa* or Balm-like plant, chiefly remarkable for the leaves, all but their green margins being of a dark crimson or blood colour. The plant was sent by Mr. Low, of the Clapton Nursery, to Kew Gardens. The flowers, purple and white, are in long, upright clusters or racemes. It is a native of Java. Sir W. Hooker says:—"Nothing is more easily cultivated, and no stove should be without it, for it flowers throughout the summer, and till the setting in of the winter." It belongs to the Natural Order of *Lipworts*, and to *Didynamia Gymnospermia* of Linnæus.—(*Botanical Magazine*, t. 4754.)

DENDROBIUM CYMBIDIIOIDES (*Cymbidium-like Dendrobium*).

This Orchid is the *Desmotrichum cymbidioides* of Blume, but that genus has been incorporated with *Dendrobium*. "Native of the lofty wooded mountains of Gede Salak, in Java." Sepals and petals yellow, labellum white, sprinkled near the base with purple.—(*Botanical Magazine*, t. 4755.)

BILLBERGIA THYRSOIDEA (*Dense-flowered Billbergia*).

This Pine-applewort is a native of rocky places near Rio Janeiro. It was sent to the Kew Gardens by Messrs. Henderson, of the Nursery, St. John's Wood. It has erect, prickly-edged leaves two feet long. The flowers are crimson, and in a very dense bunch or thyrses, and its size and beauty are increased by the bractes being of the same colour, and descending some distance down the flower-stem. It is a stove plant, and flowered at Kew in the November of 1853.—(*Botanical Magazine*, t. 4756.)

fertiliser, and among the thoughts which never crossed his brain most certainly were the facts, that some three centuries after, instead of Peru being the land of gold, she would derive a chief portion of her revenue from that dung of the sea-birds! Yet such a fact is only one more illustration of the truth, that all which appertains to the cultivation of the soil is a more enduring source of wealth than the veins of gold which may traverse its substrata.

That our agriculture has greatly benefited by the use of *Guano*, this "dung of the sea-birds," requires no further proofs than are afforded by the deputation of the

Royal Agricultural Society which waited upon the Secretary of State for Foreign Affairs; and the motion made in the House of Commons, by Colonel Blair, during the past month, urging upon our Government the importance of obtaining this manure at a cheaper rate from the rulers of Peru. In the course of his speech, Colonel Blair stated, that Guano was almost indispensable to Scottish farmers; and the supply of it being at a reasonable rate, affected, to a considerable extent, the food of the people; "upwards of ten million bushels of Wheat being, it was said, added to the produce of the country by means of this stimulant of the soil."

Now, we confess that we are not of the number of those who are anxious to procure Guano from Peru, because the more difficulties there are thrown in the way of procuring it, and the more costly it remains, by so much the more will the science and perseverance of our countrymen be excited to contrive for it an efficient substitute. If that science and perseverance are so directed and stimulated, as Mr. Slaney said at the last meeting of the Royal Agricultural Society, we have "no doubt that the time is gradually approaching when such a substitute for Guano will be found within our own resources as will render us independent of a foreign importation."

Guano is nothing more than the remains of fish after they have passed through the digestive organs of birds; and we have not the shadow of a doubt that, from the refuse of our fisheries, including those of the Sprat, Herring, Pilchard, Whale, Seal, Cod, &c., a manure may be prepared identical in fertilizing effects with Guano.

We are confirmed in that opinion by the chemical researches of Dr. Apjohn, communicated to the Royal Agricultural Improvement Society of Ireland. He analysed the "Fish Manure" of Mr. Petit, and he found it composed as follows:

Water, expelled by a heat of 212°	8.00
Sand33
Oil	2.40
Organic Matter	50.72
Superphosphate of Lime	9.85
Sulphate of Lime, hydrated	19.61
Sulphate of Magnesia71
Sulphate of Potash	2.05
Sulphate of Soda	2.42
Chloride of Sodium	1.12
Sulphate of Ammonia	2.72

100.

This is a very close approximation to Peruvian Guano, and Dr. Apjohn shews that if this is worth £8 : 4 : 1 per ton, then Petit's "Fish Manure" is worth £6 for the same weight.

Pursuing his observations upon "Fish Manure," he observes:

"If a fish of any kind be subjected to an accurate chemical examination, it will be found to consist of water, oil, and azotized organic matter; and associated with this latter, particularly in the bony parts, will be found certain mineral salts, which may be insulated by calcination, and the aggregate of which constitute the calx or ash. Now, in connexion with the process of Mr. Petit, it is obviously important to know the per centage quantities of these different constituents; and, as far as my information extends, the know-

ledge already acquired on this subject is very limited—the only analysis which I have been able to meet with, being one of sprats, by Professor Way, published in Morton's "Encyclopædia of Agriculture," and one of herrings, due to Mr. Sullivan, of this city, and given in an article of his, headed "The Undeveloped Resources of Ireland," which occurs in the first number of a monthly periodical, brought out under the title of "The Journal of Industrial Progress."

"I here subjoin the results obtained by these chemists. The numbers for the sprats being the means of results obtained in 1847 and 1848.

	WAY.		SULLIVAN.	
	Fresh Sprats.	Dry Sprats.	Fresh Herrings.	Dry Herrings.
Water	64.12	—	67.44	—
Oil	19.05	53.09	13.77	42.28
Azotized matter	14.72	41.02	16.39	50.33
Ash	2.11	5.89	2.40	7.39
	100	100	100	100
Per centage of nitrogen	1.94	5.40	2.77	8.05

"The per centages of nitrogen—viz., 11.53 and 14.74, given by Professors Way and Sullivan, have reference, not to the dried fish, but to what Way calls dry nitrogenous matter, i.e., the dried fish minus the oil; and they are, therefore, not found in this table.

"Professor Way also gives the analysis of the ash, which is in the main composed of the phosphates of lime and potash, with alkaline chlorides, and traces of magnesia and iron, and is remarkable for containing no carbonic, and but a minute quantity of sulphuric acid.

"Before I had seen these analyses, being under the impression that sprats and herrings were the fish most likely to be used in the preparation of fish guano, I had resolved to make them the subject of a chemical examination, but was not at the time (about the 10th of last January) able to obtain specimens of either in the Dublin market. I thought however, it would not be uninteresting to experiment upon some other varieties of fish, and I accordingly selected for this purpose a haddock and whiting of small size, which gave the following results. The haddock weighed 11.6, and the whiting 10.2 ounces.

	HADDOCK.		WHITING.	
	Fresh.	Dry.	Fresh.	Dry.
Water	74.33	—	76.18	—
Oil	1.15	4.48	2.34	9.20
Azotised matter	19.35	77.70	17.74	74.50
Oil	4.57	17.82	3.74	15.70
	100	100	100	100
	Fresh.	Dry.	Fresh.	Dry.
Per centage of nitrogen	3.53	13.76	3.43	14.43

"The analysis of the ash is not as yet completed.

"Upon comparing these analyses with each other, the haddock and whiting are found to have very much the same composition, the principal difference being that the latter contains better than twice as much oil as occurs in the former. But when they are compared with those of Way and Sullivan, the discrepancies are very great indeed. We find, for example, the amount of water in haddock and whiting to be about ten per cent. greater than in sprats or herrings, their per centage of oil to be in comparison quite trifling, and the amount of their azotized matter and ash to be considerably higher. Lastly, the amount of nitrogen found by Sullivan and Way is greatly less than has been yielded by my experiments—a circumstance easily understood when we bear in mind the very large relative quantity of oil in herrings, and particularly in sprats. This latter being a point of great consequence in relation to the manu-

the growing crops it must be diluted with at least five times its bulk of water.

Fresh sprat	1.94	Dried sprat	5.40	Deprived of oil and dried sprats	11.53
Do. herring	2.77	Do. herring	8.50	Do. do. herrings	14.74
Do. haddock	3.53	Do. haddock	13.76	Do. do. haddock	14.40
Do. whiting	3.43	Do. whiting	14.43	Do. do. whiting	15.82

Of the value of such manure no practical cultivator of the soil needs any testimony. It is most rich in ammonia, and is, in truth, too powerful to be used unless weakened in the way we have named. For those who may need further evidence, we quote the following from the Proceedings of the Royal Agricultural Improvement Society of Ireland, on the 7th of February last:—

In the case of sprats ..	$\frac{10.13}{1.94}$	=5.22
herrings ..	$\frac{10.13}{2.77}$	=3.65
haddock ..	$\frac{10.13}{3.53}$	=2.87
whiting ..	$\frac{10.13}{3.43}$	=2.95

"The Chairman (Lord Clonbrock) then rose and said, I should like to take this opportunity of producing to this meeting another sort of manure which I had the means of partially testing myself. It is one that is made by the London Manure Company, and is called "*urate*." I believe the learned professor, in his analyses, says, that *urate* is not a very accurate name for it, but "will not a rose by any other name smell just as sweet?" so call it what we will, I have proved it to be a very useful and valuable manure. I took it at first by the recommendations of some practical agriculturist in my own neighbourhood, who, having tested it, recommended it to my notice, and I sent a certain quantity to Dr. Apjohn, to be analyzed, and the result was, that I was a little alarmed at the time, for I was afraid it was a poor manure, but I merely read the result of the learned Professor's analyses, without estimating the details of the analyzed itself. Not being a chemist myself, I did not understand the actual value; however, I was determined to give the thing a fair and accurate trial, although, from my analyses, I was afraid I had got an inferior commodity, for we know very well that we are in the habit of being recommended to use manures which often turn out very worthless. I caused twelve drills, therefore, to be opened, one half of which I dressed with Peruvian guano, from Messrs. Gibbs, of first-rate quality, at the rate of four cwt. to the acre; I thought with my new manure the best way would be to put in a quantity which was an equivalent value to the value or price of the Peruvian guano, and I was very much astonished and agreeably surprised at the result, and my turnips got up sooner, and my crop weighed considerably more than the crop raised from the guano.

“Mr. Read—I beg to confirm, my lord, what you have stated; I did not know anything of the urate manure till I received a letter from Mr. Perse, of Galway, requesting I would give it a trial, and let him know the result. I did this last autumn when I was late with some green crops. He sent me a ton of it, and I applied it in the proportion you have mentioned—six hundred weight to the acre—and the result was quite beyond my expectations. The crop is beyond an average crop, greater than I have ever been able to grow with Peruvian guano, and it will be a very profitable investment at £7 15s a ton. It was coarse moor land where I tried it, and I thought it would be a failure on such land, but, as I had no other manure for the ground, I ventured on it, and the result was extraordinary. I have rape now growing one-and-a-half-feet high, which was not sown till very late, indeed, in the month of August.

"The Chairman—I have tried it with rape exactly in the same way. I tried it also with rape and bones, but in alternate drills. The bones produced comparatively nothing, while, with the urate, the rape was good. I tried the urate, also, on oats last year, and no one could go into the field without seeing the improvement at a distance. I have no doubt of its very great value as a manure.

"The analyses of the urate is in our journal, but I think, as I said before, to the unlearned reader that analyses would rather disappoint him; at least it did me, and, perhaps, it may other people. If Dr. Apjohn will say a few words on it, perhaps it would answer the same purpose as if it were analyzed again. He will explain to the meeting how it is that it is valuable.

"Dr. Apjohn—With respect to its being valuable, it requires very little corroboration on my part. I had never any doubt that it was a good manure. It contains phosphate of lime, four per cent. superphosphate, and three per cent. of ammonia, and any mixture containing these con-

stituents must be a good manure. The nitrogen, I may observe, is in a state in which it is very easily developed into ammonia, by putrefaction, and in this particular it differs from bones. I recollect stating in my report it was not properly called *urate*. I made that statement on these grounds, that, if an *urate*, it should have contained a large quantity of gypsum, but that such was not the case. There was a little gypsum, but merely the equivalent of the superphosphate present in it; the quantity of superphosphate of lime was small, and the quantity of ammonia was small also, but then it should be recollected that there is no superphosphate at all in Peruvian guano. I can, therefore, easily conceive that this so called *urate* would be productive, in the case of green crops requiring superphosphate, of the very best effects."

Now, the Urate of the London Manure Company thus powerfully eulogized is well-known to be compounded from the sewage of the Metropolis.

THE anniversary meeting of the Entomological Society was held on the 23rd of January, when the four gentlemen, whose names had been proposed at the ordinary meeting of January for removal were accordingly removed, and Messrs. Stainton, Dallas, F. Smith, and Edward Shepherd, elected in their stead. No change was made in the offices of the President (who holds the Presidentship for two years), Treasurer, and Secretaries. The President delivered an address, for which a vote of thanks was passed, accompanied by a request that it should be published. The great advantages which have accrued to Entomology by the exertions of numerous collectors in foreign regions was especially dwelt upon, together with the necessity for a more liberal encouragement of them than they in general receive.

The ordinary meeting for February was held on the 6th of that month, Edward Newman, Esq., F.R.S., the President, being in the chair. Messrs. Stainton, F. Smith, and Mr. W. Saunders, were nominated by him to be the Vice-Presidents for the ensuing year. The President exhibited specimens of both sexes of a new genus of Moths, sent from South America by Mr. Bates, by whom they had been reared from the Caterpillar, which reside, singly, in curiously-constructed cases, which they bear about with them (like snail shells), and into which they withdraw the head when alarmed. The female is winged. The President proposed for this new genus the name *Saccophora Batesii*, and considered it to be allied to *Psyche*, but it seems to us to be much nearer to *Gastropacha*.

A magnificent collection of Butterflies and Moths, collected in Ceylon, by Mr. E. Layard, was exhibited by that gentleman, by whom many of the species had been reared from the Caterpillar state. The collection is especially rich in small Butterflies, the nocturnal species. We also especially remarked some magnificent species of the restricted genus *Papilio*, as many as eight or ten of which have been reared, and a most lovely hair-streak Butterfly, with long tails to the hind wings, as well as several species of Death Head Moths.

Mr. J. Curtis read a memoir upon the British species

of click Beetles (*Elatridæ*), entering critically into their nomenclature, and describing several new British species. He likewise called attention to their larvæ, which are known under the common name of "wire worms," and are very destructive to vegetation, several species of which he had represented in his memoirs in the Journal of the Royal Agricultural Society. Mr. S. Stevens also exhibited a species of the same family, new to this country, being the *Elater impressus* of Fabricius, which had been taken at Rannock, in Perthshire, by Messrs. Weaver and Foxcroft, whose researches had added so many species, hitherto only found in the north of continental Europe, to our native fauna.

Mr. S. Stevens also exhibited two striking varieties of the Fritillary Butterflies, *Argynnis Euphrosyne*, and *Arg. Paphia*. The former remarkable for having a black fascia across the fore wings, and the latter for having large black blotches on the upper side of the wings. They were both taken near Ipswich, by Mr. Johnson.

Mr. Douglas exhibited a specimen of the common *Phigalia pilosaria*, remarkable for having been taken as early as the 24th of January, late at night, having been attracted to the light of a gas-lamp, at Lee, in Kent. Mr. Douglas further observed, that he had, on a former occasion, observed Moths late at night flying about the lamps where they had not been visible at an earlier period of the evening. He likewise recommended the attention of entomologists to the curious fact, that notwithstanding the severity of the season, he had already found the larvæ of the minute but beautiful Moths forming the genus *Elachista*, forming their burrows in the leaves of different kinds of grasses, so that it was necessary for persons who were anxious to rear them to be on the look-out already for their Caterpillars.

Mr. G. R. Waterhouse directed the attention of the members to the new illustrated work on the Genera of European Beetles, of which the publication, by M. Jacquelin Duval, has been commenced, and which promises to be of great service to the science. Specimens of the coloured plates were exhibited. He likewise made some observations on the generic identity of two groups of exotic Curculionidæ, which had been named *Cherrus* and *Polyphrades*, by the late M. Schonherr.

The Secretary announced that the Council have extended the time for the receipt of Essays in competition for the prizes on the subject of the Mussel Scale of the Apple, &c., to the 30th of December, 1854, and that they offer a similar prize of £5 5s. for an Essay on the Natural History of the Coccus producing the lac dye of commerce, Dr. Royle having kindly offered to furnish to applicants the information on this subject in the possession of the East India Company, and to procure from the resources of the Company, in India, any further particulars that may be required. The Essays to be delivered by the 31st of December, 1855.

PEARS ON QUINCE STOCKS.

I must confess, that, with an earnest desire to offer a little advice on another subject, I am tempted to set aside my design by the excellent observations made by Mr. C. B. Saunders, at p. 285, January 12th of the current year.

Most of your readers may know that Mr. Saunders is a Jersey nurseryman of long standing; and as to evidence concerning Pears, who shall despise Jersey advice, especially if emanating from such a quarter? Mr. Saunders is certainly as unknown to me as I am to him, but his name and position are no secrets to me; and I do confess, that his frank and generous recognition of me as an old labourer in the Pear-garden is a welcome testimonial, inasmuch, as I feel a secret pride in meeting a fellow-labourer in the cause of truth in devious tracks, although, possibly, the parties commenced their journey from very different points of the compass.

I at once return Mr. Saunders the compliment he paid me, "of learning something from my remarks." Indeed, as to myself, I scarcely ever entered a garden, however mean, or read the opinions of another, but I learned something, and many a grey-headed veteran will confess the same. I, however, profess not to review the system of culture laid down by Mr. Saunders, which, (taken as a whole, and considered as referring to the Channel Islands, and, perhaps, our more southern counties), is, doubtless, up to the mark, yet will, I fear, scarcely be found applicable to our northern counties.

My chief business in this paper will be to examine into the Quince stock question, and in doing so, I must, as in duty bound, pay more heed to the general question than to individual opinions; therefore, to those of my old friends with whom I may have the misfortune to differ, I merely say, please to bear with me.

We must not, however, in discussing matters like this, beg one-half the question; it is all very well to say, "where the soil is suitable, &c.," but the great misfortune is to have to grapple with *unsuitable* soils. Certainly, any first-rate gardener, with all appliances, may work wonders, he may make a dry soil moist, a wet soil into a dry one, a poor into a rich one, a tenacious or stubborn soil into one of the utmost pliability. But those who cater for the majority, although occasionally they may, or try to, write up higher principles than thousands have the means of practising, yet must, after all, show to numberless smaller and less ambitious gardeners how they may, without extra cost, attain a respectable amount of success.

I am glad to have my long-formed opinion better confirmed by so able a person as Mr. Saunders. The opinion, that as a ground-work to the extension of the Quince stock, it is absolutely necessary that the soil be adapted to *the Quince itself*, the recognition of this principle, if it be correct, can alone, as a foundation, support a good superstructure. Well, then, this admitted, I would ask those gardeners of great experience, who have conducted matters of this kind in four or five counties in Britain, wide apart, in how many they have seen the Quince thriving to their entire satisfaction on unprepared soil.

As to the free stock; we find Pears, in all quarters, and on soils widely differing, generally thriving as to the principle of growth. I had some of the newest Pears from Mr. Rivers, about four years since, all on the Quince, from which I was led to expect great things, but they have turned out a complete failure. I had selected with a view to enlarge the amount of late or heavy kinds, adapted to inferior climates. They were planted carefully against a wall having an eastern exposure, and the soil prepared in a way, as I thought, adapted to the Quince, but they have not grown a foot since I ob-

tained them, and they look as if they would never cover the wall. A neighbour of mine, a reverend gentleman, who takes a delight in his garden, had several of the newest kinds on the Quince, about the same time, and I have heard him express much disappointment over his little fancy trees. Now the soil, in general, about here, is rather sandy, and in the two cases I have quoted the subsoil is dry, doubtless too dry; and I think it just to mention all these little things, inasmuch as my object is by no means to lessen the desire for the Quince, but merely to sharpen people's wits, and to make them proceed with caution, in order to lessen the chances of future disappointment, and to lead to the possibility of one day placing the question on a sure and well-ascertained foundation. I doubt not that Mr. Saunders, whose urbane style is, I think, unmistakable, will excuse my thus handling the Quince rather roughly, and for proceeding a little further with this most interesting, although perplexing question. Mr. Saunders quotes Cornwall, Devon, Somerset, Hants, Essex, Suffolk, as likely counties for the Quince: a goodly array of warm quarters, to be sure; but then, what are they to all the remaining counties in England; to say nothing at all, for the present, of Scotland or Ireland; for folks there love a mellow Pear, and have and desire to enjoy the product of *their own little gardens*.

I have, for years, urged the importance of soils of an alluvial character; and that if not so, that character must be imitated, if success is expected. Here I find, with much pleasure, Mr. Saunders and I meet; he says, — "*Very dry soils, in high situations, will not suit.*" Now this, if confessed, at once points to the severity of limits imposed on the Quince stock, or to such highly artistic and expensive proceedings as will ill suit the general conditions under which the thousands of small gardeners scattered over the kingdom are placed. And if so, how is it that our great nurserymen, who have made a good thing of the Pear propagation, never informed their customers of so great a fact?

Mr. Saunders speaks of using sea-sand, lime, and salt, in a compost for Pears on the Quince. I have little doubt that the advice is judicious, as regards the sea-sand and lime, and probably it has been found wholesome practice with our friends of the little isles, who, having such things at command, and close at hand, have doubtless tried them repeatedly. Moreover, I have ever found that the Quince thrives best in a soil that is close and fine in texture; in fact, in one that would be called, by old practitioners, unctious; a broad term, to be sure, for our adhesive loams will fall under this head. It is not, however, a matter of loams, for loam alone may not settle this question. There is a character of soil, well known to gardeners, of a darkish, fatty character, that is somewhat moist in almost all weathers, and yet not wet, which is rich in some kind of humus or organic matter, and which, indeed, our Johnstons, Ways, or other celebrated agricultural chemists would better define than I can. This kind, I say, is the thing, in my opinion, for the Quince. I do not say that it is the only kind in which the Quince will thrive; I know better; but it is the kind of compost that I would advise those who are highly interested in the question to imitate; and if the subsoil, at about a couple of feet below the ground level, possesses a permanency of moisture, not wet, why, I verily believe that all the conditions requisite for the Pear on the Quince are present; the climate over-head being tolerably propitious or improved by a well-judged assiduity.

But now, I must just beg to take another glimpse at Mr. Saunders' most interesting paper, one which is, indeed, highly suggestive. Mr. Saunders heads rather low on the stock in order to plant low; and others call into action the fibres from the graft or bud, as well as the roots of the Quince; for, as he justly observes, such a course

will cause fibres to protrude. About the propriety of this, under the circumstances Mr. Saunders quotes, I have not the slightest doubt; but is not this almost tantamount to expressing a doubt about the powers of the Quince stock? I now fear that I have an unpleasant duty to perform, and that is to say, that I must disagree with Mr. Saunders, when he says, p. 285, "All the varieties do not do equally well on Quince bottoms, but the exceptions are very few."

This affirmation, I have little doubt, will be found correct as to Jersey, Guernsey, and the southern counties of England, but surely this is taking too narrow ground for the whole question.

Mr. Saunders fully recognises, in the case of the Quince stock, the immense utility of top-dressings, or, in other words, the encouragement of surface-roots. Our readers, who have been acquainted with *THE COTTAGE GARDENER* from its earlier period, will, doubtless, remember, that in all the advice I have been called upon to offer, as to hardy fruit culture, I have ever persisted in the propriety of encouraging surface-roots by a *systematic and periodical* procedure; and I have had my vanity (I may call it) gratified, by observing the idea echoed by most of our Calendar men, and by writers of what are commonly termed "original articles." The remainder of Mr. Saunders' excellent paper is of so suggestive a character, that some long evening I must beg to have another sitting with it; indeed, we are but on the threshold of this interesting question.

R. ERRINGTON.

SPRING PROPAGATION.

I ENTER on these—the first lessons in gardening—with all the enthusiasm of a young volunteer, although I have been pressed into the service, and, like all other enthusiasts, I shall be liable to overshoot the mark, or hit so low down that I shall miss my aim both ways in my hurry. It is not learning, or knowledge, or philosophy, and all that, which is so much needed, when you want to teach plain, common things, as the knack of doing it so as to be easily understood by those who have only plain, common sense, in the absence of all practice, to help them to learn from what you say or write. They send wise men to parliament, and yet members are constantly asking questions as to how things are to be done, or to be brought forward, that they may steer their course accordingly. Here it is exactly the same; we want questions to be put to us about every thing we write which is not clearly understood; we, also, want questions about things which we pass over; and we want questions relating to things which we forget to write about altogether, or but very seldom. Now, we do receive such questions, in great numbers, every week—that branch is very expensive on account of them, and one would suppose there could not be a more easy way of learning and teaching; yet it is far from it; there is not one in ten who can ask a legal question, or a question on any branch of business, with which he is totally unacquainted, that can be understood by a lawyer, or any other man of business, so as to be able to give a professional answer to it; and our branch seems to be more difficult still, for we hardly find one in twenty of our correspondents whose questions we can make anything of except by mere guessing. For all that, I wish to be reminded of every letter of the alphabet of gardening which I may pass over, or mumble about so as not to be clearly understood by all my readers.

MAKING CUTTINGS is one of the easiest things in gardening. Anybody can make cuttings after one or two lessons. In the first lesson, at page 377, we see that the *young growth* of the tops of side-shoots are the best

for cuttings of all soft-wooded plants, and that *all tops* are equally good, if they are not very strong and succulent; that two inches is the very longest that these cuttings should be, except Geraniums, and that half-an-inch is long enough for many of them, as dwarf Lobelias, for instance, if one can handle them; that all cuttings of this class are best made by a clean cut across under a joint made on the nail of the left thumb, as we used to cut the nib of a quill-pen; that the pots called "large No. 60," which are rather more than three inches across at the top, are the best size, but that a cutting-pot can never be too small; that the smallest pot is large enough for ten or a dozen of cuttings of *Lobelia compacta*; that such very small cutting-pots, and all cutting-pots, are best inside another pot one size larger, whether they are for bell glasses or not; that all cuttings are best to be quite close to the sides of the pot all round, and no more, but that a clever man, and a more clever woman, would strike every one of them, though the pot was as full of them as they could stick together; that half sand and half peat, or two parts of sand, and one part of leaf-mould, rubbed well together, make one of the best composts for all soft-wooded cuttings, without exception, including bedding Geraniums and Fuchsias; that this compost should not be pressed, for such cuttings, harder than the mould in potting a Geranium; and that a thin layer of white sand makes a cutting-pot look tidy, besides being of great use in taking the water better than peat and sand, and also keeping off mouldiness; that the pot should be nearly full, and if that was too troublesome to water, that the centre of the pot, or rather the sand in the centre, might be made into a hollow on purpose to take the water. I believe these to be the *bare bones* of that article; and the reasons for the different ways make up the whole animal where it stands. Animals and cuttings want water, and the pots must have a little water before the cuttings are planted; at least, it is safe to do so, but propagators seldom do it if they can help it; they contrive so that the sand and peat, or leaf-mould, or whatever they mix for the cuttings, is just damp enough to hold together while they "put in the cuttings." *Planting* cuttings is an outlandish way of talking; they are always *put in*, no matter where; then, after they are put in, they are well watered with a fine rose-pot; with a good, free drainage, and this sandy compost, in such small pots, it is hardly possible to hurt cuttings with too much water; bottom-heat that would roast a Cucumber will not hurt them if they are double-potted, and if they stand on the surface of the bed, the outer pot keeps the other from drying, so that the sides of the cutting-pot are *always moistish*, and that is just what makes the roots come so soon, and creep down the sides with such evident relish.

So you see, that if the operation is done in this simple way, and the pots and cuttings are kept tidy afterwards, there is really no such danger about a hotbed as one might think; the greatest fear is about the smell of it, as that from hot dung, or a mixture of dung and leaves, or from the linings outside, is a most deadly poison to cuttings and to most plants. I only know the Pine-apple plant as an exception, and that would live and thrive in a steam from hot dung that would kill a house spider, or any of the insect tribe: a fact which gardeners take advantage of to kill the different scaly insects which infest this plant from the cradle in a wild state. There ought to be a small thermometer in every cutting-bed to tell the heat morning and evening; and if there is nothing but cuttings in the bed, the thermometer should never fall, day or night, below 75°, and to be between that and 90° or 95° in the middle of a hot day. When the plants are rooted, potted off, and come to their senses, as it were, we keep them much cooler at night, as they would be in a wild state; but for cuttings,

and all stages of propagation, we are acting artificially, and contrary to the course of nature in every way, and in none more wide than in the matter of heat both for the bottom and top degrees. The centre of a new dung bed is the hottest, and the sides of an old one, which is kept on by hot linings on the outside. One seldom gets the right degree of heat from these beds longer than a few days at a time, but that is no great harm; from 85° to 95° is what I used to prefer at six inches below the surface. A layer of tan is the best thing to put over a cutting-bed, for plunging the pots in, or for keeping down bad smells; sand is the next best; leaf-mould the next best, but it is very liable to be over-run by worms; an old mushroom-bed broken-up, and the small parts kept for surfacing, is a very good substitute for these things. I have used sand for many years exclusively for this work, and, when it is to be had at hand, I would take it before anything I ever saw tried. Our correspondent, in the turf-district, would find sifted turf, kept a little damp, the best possible thing for the surface of a cutting-bed. When the heat is uniform, from 75° to 85°, few cuttings begin to grow before they are rooted; and seeing them make a start is the index to their rooting; but, with a higher degree, many cuttings would seem to grow without making a single root.

When cuttings are put in early in the spring, and a large supply of plants is wanted from a small stock of any given plant, it is not an economical way to remove cuttings as soon as they are rooted, or to have them potted into larger or smaller pots; it is better to allow them to stand as they are, and as soon as they have made a growth sufficient to make another lot of cuttings to cut them all down to one joint from the surface of the pot, still leaving the pots in the bed till another growth comes up a little, then to remove the pots to a more airy place for a week or ten days before the struck plants are repotted; however, when one is at a pinch for any particular plant or kind, I see no fear in leaving the first pot in the cutting frame until three or more crops of cuttings are got from the original ones; this I have done with a thousand pots in my day. I once ran out of a blue *Anagallis* altogether, and had to send two hundred miles for a few cuttings in February; I got only seven little cuttings in a box by post, and from those seven I got some hundreds of plants by a fresh crop from every pot of them as fast as they rooted, and not a pot was moved out of the hottest part of the bed till near the end of April, and I forget how many crops I took from the first pot; but there was a fresh crop every eight or nine days.

I never could find room to pot-off rooted cuttings into single pots before the middle of April, and if I had, I very much doubt the use of it. The safest way, and the less trouble, is, after they are a week or so out of the cutting-bed to shake them out of the first pot, and put four or six of them in the same sized pots with a richer compost, two-thirds leaf-mould, or any light rich stuff, and one-third of sand and peat, or all sand if peat is scarce, and to plunge the pots in heat for another week; after that to remove them to a cooler bed with more air, or what we call the nursing bed; and after a while to divide them again and pot them singly, or, what is better, to plant them in rows across a bed made on purpose for that stage of the work; but, of course, all that is not to be looked for in limited places, but the principle can be kept in view, and applied according to means. In the nurseries, it is best to have every plant in a separate pot as soon as it is rooted, for the market; but in private and small establishments there is a world of trouble in watering so many little pots, even if there was sufficient room for them; and to put a little newly-rooted plant of this class into a large pot would be the same as trying to kill it by inches.

PELARGONIUM CUTTINGS.

It is never a good plan to make cuttings of greenhouse Pelargoniums (*Geraniums*, as they are usually called) in the spring, but one is often tempted to do so, now and then, with a new or very scarce kind, and then only the top of a shoot, here or there, where they came too thick for training properly. There is no general rule for such cuttings as to length; any length that you can fix firm in the cutting-pot, with a little top above the sand, will do up to four inches; but suppose I had a real new and very dear plant, with three shoots to it, just now, I could not expect to make any impression with it next May or June by the flowers, but I might make lots of plants from it, and see the flowers also at the right time, then I would go to work on this wise; I would leave the strongest shoot to flower, and I would take two as short cuttings as I could manage from the other two, put each of them in a thumb-pot with a little loam, leaf-mould, and sand; strike them like *Verbenas*, keep them in the hotbed after they were rooted, and potted into a 3-inch pot till they were five or six inches high, then whip off the tops and make two more cuttings in the same way, and so on till the end of next May, and all this time I would use every bit of new growth which appeared on the original two shoots on the first plant, and by the beginning of May I would even stump down these two shoots for final cuttings, and after the plant flowered I would cut down that shoot also, and being the strongest, it will be as forward next autumn as the other two which were cut a month or six weeks earlier. All this is not to be recommended as good practice; far from it; but it is wonderful what one can do, even in a small way, with a new plant. These spring cuttings ought to be planted out-of-doors early in June, and to be taken up and potted by the end of July, and they would come in bumpers next year.

BEDDING GERANIUMS.—Many of them can only be propagated to advantage in the spring, and four inches is the best length for the cuttings, and the cuttings to be put in half-an-inch deep, the same light compost as for other soft-wooded plants will do equally well for all bedding *Geraniums*, without a single exception. The *Golden Chain* is yet the scarcest of them, and every inch of it will strike now as freely as a *Verbena*; the little shoots may look now as brown and seem as firm as horns, yet these will root with no trouble, and no matter how short they may be, the plant will do all the better if they are all cut close in, say to an inch of the older stem. After this cutting-in, let the old plants be kept rather dry for six weeks, and they will break out again, and do all the better for it; and none of these should ever be kept in pots all the summer. *Touchstone*, a bright scarlet flower, is the next scarcest, and one of the best bedders; a very strong grower, that is not worth a straw if not propagated in spring; summer cuttings of it from the flowering wood, in summer, will never make a bushy plant, as such plants will soon get bare and look bad; they are also not nearly so easy to keep in winter. *Lady Mary Fox*, as good in every respect, and as bad in all details, as the last, and the self-same treatment for both. *Diadematum*, *D. rubescens*, and *D. regium*; after discarding *D. bicolor*; the other three are among the very best bedders, and all of them ought to be propagated in the spring, but they will do from summer and autumn cuttings nearly as well; *Wilmore's Surprise*, the new, large, half-double one, is of this class, a shoot from the old *Diadematum*; but whether it is as good as they, for beds, I cannot tell, having not seen a bed of it yet. All the *Quercifolium* breed ought to be propagated in the spring; but, like the *Diadematums*, they will do from summer cuttings; and four-inch cuttings are the best size. *Unique*—I have always maintained that spring cuttings of

this fine bedder are the best; and have also shown that it will strike in the open air as freely as any of the race, and so has one of our correspondents, a gentleman of great skill in most plants. Two gardeners, from Essex, called on me once, and they almost told me to my face, that it was either a mystery or a farce to say that it could be had from cuttings except in the spring; and this very week, I was in a nursery, where I saw scores of splendid old plants of it lying idle on the stage of a very cold greenhouse; and, although I never saw the owner before, I took the liberty to ask him how he could afford to keep them idle at such a time; and he seemed quite astonished, when I told him that they would root like couch grass, as he always understood this kind could not be rooted but at the end of July, in the open air. He never heard of such a book as THE COTTAGE GARDENER, and he did not take in any of the gardening periodicals or papers, yet he has the best stock of *Unique* and of *Quercifolium superbum* or *coccineum*, that ever I saw in a nursery. Cuttings of the *Unique* should be as short as one can manage to make and fix in the pot, because it is so long between the joints, and those of them from cuttings this spring will hardly be fit for beds next summer. Young plants of this kind grow so rank that they do not flower half so well as old plants, and that may be the reason why it is not seen in every flower-garden in Europe, for of all plants, we have nothing like it in colour. The true way to manage it is this—very short cuttings in February, March, or April, will make plants with short-jointed stems near the pot; the grand secret for keeping plants of it ten years or more, to be single-potted in 48-sized pots, by the middle of May; these pots to be plunged in coal-ashes, or in something, early in June; to let the growth trail on the ground, and to cut them to four or five joints next the pot, in the first week in August, and to make cuttings of every bit of them on the spot; then to put these cuttings in pure sand, or very sandy compost, full in the sun, but to be shaded with some boughs for the first three weeks. If the cuttings are long-jointed, as they are almost sure to be, though not so long as cuttings taken from an open bed, let the plants be potted as deep as to bring down a joint to very near the surface when they are taken up at the end of September. These long-jointed plants to be cut down to the joint next the pot the following February, and to stop or nip off the points from the next growth twice or three times before the end of May.

As soon as the plunged plants have started, after being so cut down, they ought to be unplunged, and the roots that have escaped through the bottom hole of the pot must be cut off, and the pots to stand out in the full sun; this check will cause the whole autumn growth to be close-jointed; and when the tops are taken for cuttings, next February, where can you find more bushy plants?—not in England, I am certain. After that they are fit for the Queen, or for anything; but let us have them planted in a bed, in poor soil, and no *Tom Thumb* that ever was born or propagated will ever excel them in the abundance of flowers, or richness of colour; that is, if you plant them in the right way, and not as some people do, who leave half-a-mile, or too much space between plant and plant: six inches from the branches of one plant to the branches on the next is the right thing; and if there are any branches long enough to train, you are in the wrong box; for this sort will never do well if the shoots are allowed to run long in pots. All of them should come directly from a firm, stalky bottom, after the plants are planted out in May, and the open six-inch spaces between the plants might be planted quite thick with the little annual *Eucaridium grandiflorum*, from a sowing about the middle of April; these would flower while the *Uniques* are filling up with new growth.

All the breed of Scarlet Geraniums may be propagated in the spring, if the stock is needed; and the young plants will do to plant round the outside of the older ones. There is no particular rule about the length of cuttings of these—anything, from three to six or seven inches, will do equally well. The dwarf kinds, as *Tom Thumb*, *Frogmore*, or *Baron Hugel*, will do at three inches, and the strong ones may be as long as one can spare the cuttings. All these young Scarlets are better if potted two-and-two in pots, as, when you plant them out, the two can be pushed a little apart without much disturbance to the ball, and that will be wide enough apart for most of them. All the more bushy old ones ought to be set apart for baskets, or vases, or for windows; and the more low and bushy they are, the better they will look in these conspicuous places. There is no better plant going for a small bed, or for an edging of the kind to a large bed, than *Baron Hugel*—a very dwarf kind, with bright scarlet flowers and a dark horse-shoe leaf, and young plants of it require to be planted thick—not more than six inches apart every way, and there ought to be two rows of it for an edging to tell properly. There is a crimson variety of the old *Variegated Scarlet Geranium*, which makes a fine variety in a flower-garden; and there is a variegated form of the *Prince of Orange*, a much neater plant for an edging than the green one, and it is equally sweet in the leaf; it makes a peculiar edging, because it is a different leaf, and a different tint from all other variegated Geraniums. It deserves to be grown as much as any of that class, and there is the new scarlet, or crimson Ivy-leaf sort, which I noticed at one of the Shows in 1852—a very fine thing for a wall, or to hang down from a basket, or vase. A couple of plants of this one would furnish a dozen good cuttings this spring, which would be time enough for this summer, as they grow fast, and one might soon get a stock of it.

ROSE CUTTINGS.

THE spring is not a good time for cuttings of Roses in the open air, yet I have grown lots of them that way, even from cuttings put in as late as the middle of April; but there is a particular way of making and managing them. All the Chinas, and Tea Roses, all the Bourbons, hybrid Bourbons, and hybrid Perpetuals, with Noisettes, and all the climbing Roses, and a great many of the hybrid Chinas, as *Chenedole*, *Blairii*, *Charles Duval*, &c., will come from spring cuttings, but from all the other classes it is mere chance work at this season. The *China* and *Tea Roses* will do by cutting across a joint where the last growth issued from, if the shoots are of a middling size, and not more than four inches long: they do not like to have the top shortened at this season. All the rest ought to be heeled-cuttings, and as short as they can be had; anything below six inches will do. A heel-cutting is one which is pulled downwards so as to wrench it from the branch; the heel is the part torn off, and if a slip of the bark comes off with it they call it a tail, and this must be cut off from the heel as carefully as a cutting is cut, and if there is any ragged wood to the heel have it off also; but on no account shorten the top in the spring. When looking out for such cuttings, choose those that have begun to grow, or whose buds are much swollen, just the opposite of what you would prefer last October. Then, every one of these buds, top bud and all, you must remove by a very gentle touch with the point of your finger on the point of the bud—without this you will not get one out of ten of them to root, do what you will with them. But I must make the reason clear for you: these buds would burst a long time before any roots came, and by their leaves sucking the juice they would soon deprive the cutting of that which would go to make roots; but if you get them off as gently as I say, you will not disturb other very small

buds which cluster round the bottom of most of the large ones; and before these very small buds have time to swell, the natural force of the season, so to speak, will cause roots to grow. All such cuttings ought to be in little pots of very sandy stuff, pressed rather firm, and the cuttings to be close to the sides of the pot; then plunge all the pots in the ground, so that the rims are just out of sight, and no more; the place to be a shady one, where the sun cannot get at them. In dry, parching weather, sprinkle them with a little water early in the day, and about once-a-week.

Now, at parting, let me urge on you to use pots, and I shall tell you the reason why next time we meet.

D. BEATON.

A FEW HINTS ON THE THEORY AND PRACTICE OF PROPAGATING BY CUTTINGS.

AN amateur lately expressed a desire that I would give a few ideas upon this subject, as applicable to various circumstances similar to a late article on sowing *Pelargonium* or other tender seeds. He wanted to know something about the rationale of rooting cuttings, and the most successful and economical methods to adopt during the spring months. These general matters are always attended with this difficulty, that the very particular which the inquirer may most want may be the very subject that the writer passes over unnoticed. But this is the less to be regretted, when any correspondent may obtain the information he wants, if it is possible to supply it, for the expense of a postage-stamp.

At some other time, though not now, I may have something to say upon our friend Mr. Beaton's theory of pruning, respecting which he so courageously bids defiance. There seems to be a growing feeling that the whole system of Physiology is not the cut-and-dried symmetrical affair that books and doctors represented it to be. Only a few years ago, and they who, like myself, had any doubt of a regular circulation of fluids in plants, of watery unelaborated sap upwards, and of elaborated organisable juice downwards, and that as regular, and by vessels as distinct, as the veins and arteries of the animal system, were, in defiance of all potent facts, sneered at as crotchety sceptics. When such facts come to be noticed and reviewed by men of great continental reputation, a vague idea steals over the mind that some change must be made in the system, as no theory can be of any avail that is not based upon, and in accordance with, general facts.

My belief in the theory that all addition of cellular and vascular tissue *must* proceed *downwards*, from matter now elaborated by the leaves, or stored up after being elaborated, was somewhat early shaken in attempting to raise plants from cuttings in a hotbed, in which, though I was not very successful in getting roots to come in the soil, yet, owing to the great atmospheric heat and moisture, not only did the upper buds on the cuttings swell and elongate, and throw out roots there, but the very upper points of cuttings, cut over an inch or so beyond the bud, had many of them knobs of cellular matter there formed; and from these, when kept somewhat shaded, roots protruded, and hung down in a pendulous position, while, in two or three cases of *Orange* plant cuttings, some small, leafy appendages appeared in connection with this seemingly cellular matter, but which dwindled away as the buds below began to extend into shoots. Now, although many years have passed since then, I thought that the stimulants of heat and moisture could make exceptions to a generally-received theory; for roots came more freely from top and sides than from the base of the cutting; and as this was not at all a desirable result, nor yet, even, under these circumstances, to be relied upon as a

general one, I drew the inference, that it was unwise and undesirable to stimulate and expand the top of a cutting more than was needful for its healthy action; and this kept in view, young plants will be sturdy in their growth, and not drawn and debilitated.

The mystery of raising plants from cuttings would be lessened did beginners recollect that every perfect bud could, under proper circumstances, be made into a plant as well as a perfect seed. I do not now allude to the process of taking a growing bud from one plant and transferring it to another, as in *Rose-budding*; I allude to raising a new individual from the single bud. This is most generally done with deciduous plants and when in a state of repose—such as the *Vine*, in winter or spring. In this case, a piece of the shoot is left on each side of the bud; the cellular and vascular tissue are thus exposed at each end, as well as the woody fibre. To increase this surface, alike for the absorption of moisture and the expansion of tissue, many take off a thin slice of the bark and alburnum on the side of the cutting opposite the bud. These buds, with from half to one inch of the shoot at each end, are generally fixed firm, horizontally, in a pot of soil, and covered half-an-inch, and placed in a briskish heat; two things here being worth noting—that the stimulants affect all parts of the cutting equally; and then, again, at potting time, it will be found that tissue and roots have been protruded, not from one part continuously, but some at the upper end, some at the lower, and others from the underside opposite the bud—a fact worthy the attention of the physiologist.

We cannot follow this plan with cuttings from *growing* plants, because the bud would rot in the soil. We make the nearest approach to it when, in the case of scarce *Verbenas* and *Calceolarias*, &c., we cut between each joint, fasten the stem in the soil, and leave the buds with part of their leaves above, or, in extreme cases, and, where the buds are opposite, splitting the stem into two. In all such cases, especially when the stem is soft, the base and the split sides should be dried in the shade before inserting them. There are only, comparatively, few things that can be thus managed. Most cuttings require from two to three buds, two being essential; the upper one for the ascending stem of the plant, and the lower one, across the base of which the clean cut is to be made, for the descending roots. There are two reasons why this is generally required. The first is, that at these nodes or joints, where leaves are placed and buds are formed, there is a consequent concentration of vital forces; and the second is, that at these places the stem is harder and more dense than between the joints, and, therefore, when the knife is sharp and the cut clean, less likely to damp or rot at its base. To prevent this latter evil still more, all cuttings, except those of small hard-wooded things, such as *Heaths* and *Epacris*, will be benefited by having their bases dried in the shade or the sun, in proportion to their succulence, while the upper part of the cutting is kept moist and shaded. The reasons, why in one case it is recommended to slip off cuttings close to the older stem with a *heel*, and in another to cut through just at the junction of the young and older wood, are, that in the former case you may obtain an accumulation of vital power at the seat of the embryo buds, and in the latter, that from the hardness there may be less danger of damping off.

Now, unlike the case of dormant buds, to which we have alluded, and which, though better to be excited gradually, will yet stand a considerable amount of sudden excitement without great injury, the great rule, in the case of those cuttings taken from growing plants, is just to keep them healthy, and take nature and the season of the year for your guide, never giving an additional excitement from extra heat, except communicated

gradually, and that chiefly when the sun is gaining strength, taking care that this excitement should act more upon the part of the cutting in the soil than on the part above it. No greater cause of failure can exist, than at all times, and in all circumstances, transferring cuttings into a hotbed. Many fail to get greenhouse and even bedding plants to strike in summer and autumn from this cause alone. In no case should they have a much higher temperature than the plants stood in until a callus is formed, and the protrusion of tissue has taken place. Nay, many things, in autumn, will strike better when kept cooler, such as being transferred from a south border to a north one. Few things at that time will stand the excitement of extra heat. The sun is losing its force, and vegetation is not expanding, but accumulating for its winter repose, and we must act accordingly, until when callused we excite the cuttings to root when we are in a hurry. Patience given as to time would neutralise many failures. Even in spring the extra heat we give should be something proportionate to the season, and to what the plant formerly enjoyed. When, therefore, we are in a hurry, the best plan is *gradually* to give the plant an extra excitement first. Many things will stand extra heat without this precaution, but many will not; and all will be healthier in consequence. Besides, the extreme of dispatch in rooting, even in spring, is not always the extreme of advantage. I have rooted *Calceolarias*, in March, in fewer days than they required weeks in October, and onwards; but, if they had been struck cooler, they would have required less hardening off, and been less liable to insects and weakly constitutions.

"But how are we to keep a growing cutting healthy, and get it to root, without giving it an exciting stimulus? Will not the light and air rob it of its juices when its severance from the root renders a supply naturally impossible?" Quite right. But how is this extra heat, the stumbling-stone of young propagators, to remedy the evil? Will not the extra heat just stimulate the perspiring processes, and thus *welt* your cuttings; or, if that is prevented by a close atmosphere and shading, will they not become wire-drawn and attenuated? I have instanced a Vine-cutting in heat. Take the case of a ripened shoot of a Currant tree inserted in the ground in autumn. If the ground, as a whole, has been warmer than the atmosphere, you will get roots before you get shoots. If you left a bud at the base of the cutting, that would be expanded before those exposed to the atmosphere. If the atmosphere was the warmest, it would be the reverse. Generally, they are so alike in average temperature, that the bursting of the buds and the rooting proceeds almost contemporaneously. But cut off a growing shoot in summer, and place it in a sunny place, and where would it be next morning? But cover it with a glass, give it a moist atmosphere, keep its leaves moist, and shade from bright sunshine; and, by a very round-about way, you would obtain a nice-rooted plant.

Now, with slight differences, the same modes and principles must be adopted with all tender cuttings taken from growing plants. Let us merely mention a few of them. 1. The cutting should be maintained in healthy action; whenever it flags, it will be so much time lost. 2. Increase of temperature, if moderate, will give an additional stimulus to the vital powers; a great rise will debilitate the system, and cause extension upwards instead of downwards. The increased heat should be made to tell chiefly on the base of the cutting. 4. The soil in which cuttings are placed should be firm, and the surface a dampish silver sand, next to impervious to air; or the soil should be rather loose, however the surface be covered, in proportion as the cuttings are hard-stemmed or rather succulent. 5. The sun, by the too rapid fixation of carbon in the cutting, the air and heat, by carrying-off its moisture, would,

if permitted, soon leave a wreck behind; and we, in the first place, keep the cutting in healthy action by neutralizing their influence. We keep it from access to air by means of a frame, or bell-glass; and, if at all tender, most likely by both; and we keep the sun off by shading, or causing its rays to be diffused before reaching it. Then, secondly, we do not merely keep in view that the whole surface of the cutting is a transpiring medium, we make it also an absorbing one, by surrounding it with an atmosphere saturated with vapour, and by frequent dewings of the stem and foliage—a much better plan than frequent soakings of the soil in which the cuttings are placed, and escaping the decomposition of the base ends, often the consequence of these soakings. But, 6thly, if the air is long confined, such as under a bell-glass, and especially if there is the smallest bit of fading leaf, the atmosphere will become impure, and, then, when placed near the glass, though shading from sun be necessary, yet every moment's shade more than the cutting actually requires will act as a drawing and debilitating influence. The best chance of rooting consisting in the cutting absorbing and decomposing for itself fresh organisable matter, which it can only do in light, suggested two practices—the first, after a few days, when bell-glasses were kept close down, tilting them up a little on one side at night, which purified the air, and if conical glasses were used, rendered all the trouble of glass-wiping in the morning a thing of the olden times; and, secondly, keeping the cuttings, whether under glasses or the reverse, at such a distance from the glass that the rays of the sun were too diffused to hurt them before reaching them, while the bother and uncertainty of shading were completely avoided. This idea I received, some seventeen years ago, from Mr. Caie, who, from practising it, was one of the most successful propagators at that time round London. I have acted on it ever since.

At present, I have several lights of cuttings now striking, consisting of *Calceolarias*, *Petunias*, *Verbenas*, &c., that have had nothing in the shape of glasses, more than the glass sash, and have never seen a bit of shading. The cuttings stand fully two feet from the glass at the back, and some sixteen inches in front; and if the sun should continue strong, the cuttings and walls are dewed several times a-day with water from a syringe, the sun thus getting something else to evaporate instead of the juices of the cuttings. I have frequently thus dewed fifty lights with less than a garden pail of water, and yet every leaf was damped. The mode of doing so I have previously described. Then, 7thly, the size of the cutting, and the number of leaves, must just be in proportion to the means you possess for keeping the cutting healthy, and preventing its undue perspiration. In plants with leathery leaves, I have often kept all the leaves, even those at the joint through which the knife passed. But in the case of plants with softish stems, this would be apt to promote damping and rotting off, in which case they should be removed. Cuttings with large leaves also require great care; and all things considered, trouble is lessened when the cuttings are rather small, and the leaves, if many and large, are lessened and shortened. A few small, healthy, whole leaves are important for carrying on the necessary functions of the cuttings.

And, lastly, cuttings at all tender or difficult will strike sooner the nearer the base comes to the drainage, and, better still, to the sides of the pot, as the resistance thus given to the swelling of the cutting causes roots to be produced more quickly. Hence, as a rule, a few cuttings round the sides of a small pot will root faster and be every way more sure than many cuttings across a wide pot, or merely inserted in a bed.

A few words more to meet several inquiries. "Dung-and-leaves-heat is considered, when sweet, essential for spring propagation, as furnishing such a genial atmosphere. I have bottom-heat from hot-water. Should I make a bed above the heating medium to receive these advantages, and when?" Just as you like. Your cuttings will do admirably plunged in sand, ashes, or any thing you like; and by watering your heating medium you can have vapour in abundance, though, except you carefully use manure-water, you will not have such a genial moisture as that proceeding from sweet dung and leaves. But leaving the dung alone you will have at least freedom, comparatively, from one annoyance—the slugs and woodlice that somehow get into almost every bed and pit in an old garden; and you will also escape the unpleasantness of not having the bottom-heat you require, as your heating medium will be next to inoperative if it has to pass first through much depth of compact rotted dung. The cuttings in the sand above the heating medium will not, therefore, strike so fast as in a hotbed of dung, but they will be subject to fewer casualties. With such a place, heated by hot-water, propagation may commence after January.

2. "I am making a bed for propagating numbers of things; the plants being previously excited, when should I commence making the cuttings?" The end of February and the beginning of March will be time enough, as before that you might lose more, from want of air and damping, than you would gain in forwardness.

3. "I want to propagate many things, such as Fuchsias, Geraniums, &c., for my window, when should I begin?" April and May will be soon enough, but if you have bell-glasses you might try a few at the end of March. In your case, with only your window, you must, if you begin early, use your chimney-piece in cold nights. Place the cuttings close to the window in warm, dull days; and two or three feet from the window, or shaded with a thin curtain, when it is sunny.

R. FISH.

SCRAPS FROM MY NOTE BOOK.

CHATSWORTH.

By way of variety, it is pleasant and desirable to visit gardens in the depth of winter, though at that season the out-door garden has not many charms; the glass-houses are the more interesting, the contrast and comfort being more seen and felt.

During the late severe snow storm, business called me to visit several places, and at each place I saw something interesting. Many persons, I fear, imagine that gardeners in winter are literally "frozen-out gardeners," and if in a good place have almost a sinecure of it. Before hothouses, forcing-houses, pineries, &c. were built for the enjoyment of the wealthy classes, such a state of ease to the gardener might have taken place, but the case is widely different in our day, even in the deepest and most severe winter. Indeed, he has now to exercise a large share of forethought, and close attention, almost day and night also, to keep out Jack Frost, and to keep a continual look out for choice plants to bloom. He has to put his Vines and Peaches, Cucumbers and Mushrooms, in motion; he has to produce his winter salads, his early Sea-kale and Rhubarb; and a little later in the season he has to prepare thousands, nay, in some places, tens of thousands of bedding-out plants to furnish his flower-beds in the, comparatively-speaking, new massing style; and all this, and a great deal more, he has to perform, study, and bring to bear through all weathers. Truly the gardener's bed is not, in this generation, a bed of roses. These thoughts passed through my mind lately, whilst visiting such places as Chatsworth, Heaton Park, Kinnel Park,

Penrhyn Castle, Haigh Hall, and many others. Any person that has any knowledge of gardening would observe, at this season of the year, busy notes of preparation to bring to bear certain effects hereafter. I often think a good gardener would make a good general; the same train of ideas passes through his mind—he has to combat with numerous enemies, frost, blight, too much wet, too little, too much sun and too little, besides hosts of vermin; all these have to be overcome, rebutted, or destroyed, to insure the victory. Happily, these enemies are not his own species, and therefore he feels the less regret at bringing all his artillery to bear upon them.

At Chatsworth, I saw, in the middle of January, a most remarkable illustration of the art of retardation. At one end of a long range of Vineries there is one house devoted entirely to one variety of the Vine, for the purpose of supplying Grapes in February and March, or, perhaps, still later. The kind is *West's St. Peter's*. The crop was abundant, the bunches, many of them, large, and the berries as black as ink, and as plump as a partridge; finer Grapes need not be. In another house there was hanging a few bunches of fine *Muscats* and *Cannon Hall Grapes*! a rare sight for the 20th of January.

In the Peach-house range the earliest house was just going out of flower, and apparently setting well. In a narrow house some Vines in pots were showing fruit. The back wall has a raised narrow border. In this border the pots containing the Vines were plunged up to their rims in soil. The front Vines were not plunged, and by this method the Grapes ripen in succession; those on the back wall, of course, ripen first, and the others afterwards.

The Cucumber-house was in full bearing. I noted several nice fruit cut, and the cut end set in water. The young man told me that was an excellent way to keep them fresh—a good scrap of information. In a Pine-pit I observed some very fine, well-swelled Pines, of the kind called *Smooth Cayenne*, which I was informed has a good flavour in winter, equal, if not superior, to the *Montserrat*; superior it certainly was, in point of size, at that time.

In the Mushroom-house, which, by-the-by, is a very superior one, was a great quantity of that delicious vegetable. In the floral department, I was much struck with the Victoria-house. Instead of that magnificent plant, the tank was dry and filled with Camellias, Azaleas, and Rhododendrons. There was a change with a vengeance. Let not the reader, however, suppose that it is no longer the Victoria-house. *That plant is now proved, without any doubt, to be an annual*, and therefore perishes in the autumn. Young plants are to be raised early in the spring, and as soon as they are large enough will be removed into the noble Victoria-house, and these temporary inhabitants will be banished into other quarters.

The Orchid-house, as a matter of course, I paid my due respects to, and found it gay with bloom, particularly of the following:—*Ansellia Africana*, two noble plants with numerous spikes; *Calanthe masuca*, two spikes at this (for that plant) uncommon season; *C. vestita*, with many spikes of the deep-coloured spot variety; *Dendrobium heterocarpum*, with its honey-scented pale blossoms; *Lælia anceps*, and its variety *Barkeriana*, many blooms; also the charming *Sophranitis grandiflora*, a tiny plant, with flowers three times its size; *S. violacea*, a pretty thing in its way; *Barkeria Skinnerii*, the deep-coloured variety; and several species of *Zygopetalum*, the prettiest of which is *crinitum*.

T. APPLEBY.

THE ANTIRRHINUM.

(Continued from page 350.)

A GREAT number of florists' flowers, though exceedingly beautiful, have the disadvantage of their bloom being short lived. Such, for instance, as the glorious, though somewhat gaudy, Tulip, and the neat-blossomed Ranunculus. These, and some others, which the florist will easily recollect, only last, with every attention to shading them from the flower-fading power of the sun, some five or six weeks, but I may fairly claim for the Antirrhinum the power, with very moderate care, of continuing to reward the cultivator with its bright-coloured blossoms for at least three months, and that at a season when florists' flowers are comparatively scarce: even as a bedding-out flower it has great merit. It produces at least three colours not to be surpassed by any flower—I mean bright crimson, pure white, and clear yellow. For large beds, especially, it is well adapted, blooming continuously during July, August, and September. For this purpose I recommend it to Mr. Beaton, and should be glad if he would give his opinion on its capability and merits.

Then, again, it is very well adapted to plant on rockwork. I have seen admirable specimens grown in such a situation. I have noticed, also, very pretty plants of it growing on old brick walls flowering very freely, and giving an interest to what would, without them, have been most unsightly objects.

I trust I have said enough in favour of this flower to induce the readers of THE COTTAGE GARDENER to cultivate it more than they have hitherto done; and in order that such as have not yet grown it, or but imperfectly so, may succeed, I shall endeavour to describe the best way of cultivating it.

Propagation: by Seed, to obtain improved varieties.—The Antirrhinum is so perfectly hardy that the seed may be sown in the open border of the garden. I would advise the zealous raiser of improved varieties first to procure from some respectable florist a few of the leading best sorts now in cultivation, grow them one year, and save seeds from them, keeping the seed of each variety to itself. By adopting this plan he would find out the best breeders. There is no seed like home-saved. I have before me, now, a letter from a gentleman near Liverpool, containing an unlimited order for any kind of florists' flower-seed, provided I could warrant it being gathered from distinct varieties kept separate; meaning, for instance, seed saved from *Cineraria Henderson's Marianne*, or *Calceolaria Sultan*, or *Hollyhock Cream of the Valley*, or *Fuchsia Bank's Glory*, &c. Every seedsman throughout the length and breadth of the land knows that flower seeds are not saved separately from separate varieties, but I do think the idea such an order implies is worthy of being carried out. Packets of so saved seeds would certainly sell, and there would be more probability of the purchaser obtaining improved varieties from such seed. It is the consideration arising from my customer's order that leads me to recommend the keeping the different varieties of Antirrhinum seed in separate parcels, and the probability of obtaining improved distinct varieties would be increased, if the different sorts were grown at a distance from each other, the seeds kept in separate paper, named, and sown in separate parcels. It may appear tedious such a process, but trouble is nothing compared with success.

The time for sowing this carefully-saved seed is about the second week in April. Prepare a bed for it in an open part of the garden, by manuring it well in the autumn, and digging in the manure at the same time, leaving the surface rather rough for the frosts to act upon it and pulverize. Then, when the sowing time arrives, fork the surface over, breaking it as fine as pos-

sible. Choose a time when the surface is moderately dry for this operation. Have a sufficient number of wooden labels ready, rub a little white lead on them, take one, and write legibly the name of the variety from whence the seed was gathered; sow that, and then write the next, and sow it also, and so proceed till all the parcels are sown; then rake the bed smooth to cover the seed, and the operation is finished. Should the weather prove dry afterwards, a very gentle watering during evening, now and then, will help the seeds to vegetate.

When the seedlings have attained an inch or two in height, dig another larger bed, and transplant the seedlings into it, planting them five inches apart every way, keeping the sorts still separate. Here they may remain till they flower. Then compare each, as they come fully into bloom, with the properties as given in my last paper on this subject; and all such as are quite up to, or superior to, the points, give a name to, and describe them in a book kept for that purpose. All the rest that are deficient in form, colour, and size, may either be thrown away at once, or planted in the front of shrubberies, if good in colour; or give them away to any poor cottager to ornament his flower-border. The good, improved sorts should be increased by cuttings; the method of doing which I shall give in my next.

T. APPLEBY.

(To be continued.)

FRUIT TRELLISES.

It would be difficult to say whether the old-fashioned perpendicular Trellis be on the decline or the ascendant. True it is, that some gardens, in which that useful old-fashioned appendage had done duty for some two or three generations, has been summarily dismissed by the present one; yet there are others wherein the time-honoured contrivance has been reinstalled in an improved form, and in many gardens it has been adopted in some shape or other, the old-fashioned one retaining many of its features still. Now, it need not be asked what benefits it confers, since we have the testimony of something more than one hundred years to prove its utility, and surely that says more in its favour than the most eloquent eulogy that could be bestowed upon it. I shall, therefore, at once go into the details of the variety of its forms, commencing first of all with that oldest shape, which, after all, is probably the best, that is, taking all things into consideration—I mean the ordinary upright Trellis.

There are various forms of this differing from each other in shape and height, as well as in the material the frame-work is made of, but usually this is wood or iron, or both together. Now, though I am not altogether positive that iron exercises a hurtful influence on the trees planted and trained against it, yet I prefer wood where other reasons do not point out iron as being better adapted. However, as other things often determine this, I need only say, that when it can be contrived to have iron standards and rails, wooden uprights fastened to the iron rails form the best material on which to train trees; to have the whole of timber is attended with after-trouble when the latter decays, which posts are sure to do; but this being a subject in Mr. Errington's province, I dismiss it, and would request the amateur about putting up a Trellis to examine those in his neighbourhood, and, doubtless, he will see a something which will enable him to apply the right means; but if his place be entirely new, I would advise him to wait a year or two before putting it up, in order to get the trees fairly established, and grown a certain length, before he applies such an open and conspicuous piece of cage-work

to his garden so long before it is wanted; the trees must, of course, be trained to sticks thrust in the ground in the mean time; but observe, I do not advocate the last measure on any other account than that of saving the Trellis work, which, by being placed in its position some two or three years before wanted, naturally diminishes its working capabilities the like time.

It seldom happens that the direction of the Trellis can be commanded, as it forms a feature in a garden when it is carried in all directions; but it will be found that those running north and south will be the most useful, as by that both sides enjoy an equal amount of sunshine; this benefit is known to the husbandman as well as the gardener; for in some districts, where it is customary to shock all the corn, they are made so as to point to the one o'clock sun, the attentive agriculturist having found that to be about the middle of the "harvest day;" and so accurately is this accomplished, that in walking over several fields it is seldom that a departure is found from so good a rule. Now, why not fruit-trees benefit as well as corn from an exposure on two sides? consequently, it would be prudent to have trellises covered with fruit-trees, and rows of vegetables, especially peas, scarlet runners, &c., planted in such a way as to command these conditions.

I will not here dwell on the kinds of trees proper to plant, but will say, that where tender Pears, Plums, &c., are so trained, they are more easily protected when in bloom than when planted or grown in any other way, as any little sheltering substance thrown over the top is usually sufficient to protect the whole tree; and at such times it is highly advisable to use such a covering as a few mats, an old sheet, or, in fact, anything that can be obtained.

We now come to "the Fancy Trellis," of which there are several varieties; one, a very common one, being a sort of continuous arch, or vault, with a walk underneath; this is very well in some cases, but it is more curious than pretty in long lengths. This is generally composed of iron or wire-work, and to look well ought to be well covered with trees. It has been argued, that by the trees covering so large a space as the arch, a greater quantity of fruit must be obtained than by trees planted and trained the ordinary way; but then it is to be remembered, that those trees have only one side, whereas those planted against an upright Trellis bear on both sides, generally; and the exposure of bloom, in such a position, to the spring frosts and other inclemencies, is greater than that from trees growing in any other way. However, it has its admirers, and may, possibly, be a prudent appendage in some gardens.

Many years ago, I had the management of a Trellis which took my fancy more than any that I have seen since; it was somewhat like one-half of an arch, the walk by the side of it being much lower than the adjoining ground where the trees were planted, a wall formed one verge, and along the top of this wall iron supports were inserted, at intervals, to support the iron frame-work of this Trellis, which, rising on the border, projected a considerable way over the wall, having plenty of head room. Of course, these iron supports had the whole weight to carry, but being placed perpendicularly they had no difficulty in doing so, and the whole presented a pleasing appearance. The top of the wall, instead of having an ornamental coping, was covered with the pretty British plant *Sedum acre* (or stone crop), which deserves more attention than it often gets. This Trellis, I may add, answered the purpose very well, while its adoption in a hilly garden was not only appropriate but highly ornamental.

There are other forms in which the same thing may be effected, as the *Table Trellis*, which is a frame-work, flat, or nearly so, and often but little elevated; this is often placed where it is advisable to train the trees in the opposite

way to the last-named, with their heads up the hill side, whereas, the other being planted on the hill curved from it, covering, or partly covering, a walk on a lower level.

It is needless here to mention the fanciful figures that are now and then introduced into the gardens of the curious, some of them are constrained to take grotesque shapes, with little to recommend them but their singularity, as, for instance, upright cylinders, with the trees trained spirally around them; fantastic globes, semi-globes, or other figures approaching thereto, have all their admirers; but as these are detached figures, rather than a continuous trained object, I must dismiss them, and in winding up this article on Trellises, would beg to remind our young friends of the Raspberry Trellis, which, by its simplicity, may with propriety be adopted everywhere to advantage, as it need only consist of three horizontal rails, with posts where wanted, and the canes, being tied to such rails, will bear fruit of better quality than when huddled together all to one stake in the usual manner. Other things might be similarly treated, but Raspas are the most benefited by it. Another description of Trellis is also often turned to good account, which is one placed on the roof of a house on which a Vine or some other fruit-tree is trained. This, however, is only applicable in certain cases, but where it is, a single year's trial will soon prove how much better the Grapes ripen on the roof facing the mid-day's sun than on the ordinary wall having that aspect; but this subject having been already treated of in *THE COTTAGE GARDENER* need not be repeated here.

J. ROBSON.

ECONOMY OF THE FARM-YARD.

THE economy of the Farm-yard must, certainly, be considered as a subject of the highest importance in connection with agriculture, for under this head has to be noted the method of managing the manure, both as regards its quantity as well as quality, and the maintenance of the fertility of the land must, in a great measure, depend upon the extent and the value of the home-made manure; for although, by the application of capital in the purchase of artificial manures, the land may be made to produce crops greatly in excess of the ordinary modes of management, yet the method of manufacturing manures in the farm-stead is now become part and parcel of the best systems of feeding, and may be considered scientifically in conjunction with the feeding of animals. In almost every portion of the kingdom great improvement in the farm-buildings have been recently effected, yet much remains to be done in different parts of the country, and in many instances, where improvements have been attempted, they cannot be considered much more than mere alterations; for some of the most essential changes required for the making and preservation of Farm-yard manure, have been but too often entirely neglected.

There is a mode of proceeding, on the part of many occupiers of land, which is highly blameable; they do not, in many instances, avail themselves of the advantage of good yards and buildings, for the conversion of their straw, fodder, &c., into manure of the best quality.

I have often noticed, upon large corn-producing farms, immense quantities of straw lying about in a

rotten or partially decayed state, and the number of cattle kept on the farm totally inadequate to convert the straw into a manure worth cartage to the field. And this leads me to one of the most important points in the economy of the Farm-yard. It often happens that a large number of Sheep stock are kept, particularly upon favourable soils, and quite sufficient in number to consume the whole of the root-crops grown, and also the far greater portion of the Hay produced upon the farm. Yet this as a system must be considered, upon the whole, disadvantageous; for the profits of a farm ought to arise from returns in many directions, and a sufficient number of either store, or fattening animals, should always be kept in the farm-steadings, to convert the straw produced into valuable manure; and for this purpose, at least twenty-five per cent. of the roots produced should be consumed by cattle, pigs, &c.

There are, however, cases in which exceptions may be allowed—such as heavy land, where it is desirable to remove the whole of the roots from the land; and also in localities where there is an extensive sale for Straw, at a good price, a considerable quantity may then be disposed of and replaced by purchasing artificial manures of the like value with great advantage; this mode of proceeding alone can justify the consuming the whole root-crop by sheep on the land.

The construction of the Farm-yard, the arrangement of the buildings, and the accommodation afforded for the cattle, must now be considered; and as it is too often the case that these are altogether insufficient to give the occupier an opportunity of converting his straw into good manure, I intend to lay down a few general rules for guidance, whereby advantages may be obtained without any reconstruction or costly alteration of the buildings; and I consider this the more necessary, when it is remembered, that it often occurs, from the force of circumstances, that new steadings built upon improved principles cannot be obtained.

First, let every building be spouted, and the water from the roofs carried away to some convenient place, where it cannot gain access to the Farm-yard and deteriorate the accumulating mass of manure. Let the Farm-yard be considered a store, or repository for manure, instead of, as formerly, a place to feed cattle in without shelter; and, previously to depositing manure in the yards, place at the bottom, peat, or loose earth, where such can be obtained, six or eight inches in thickness; this will absorb the drainage from the manure which may accumulate upon it. In placing the manure in the yard, let each kind be spread about the surface, in order that a proper admixture may take place; its value will then be equalized in all respects when required for use. I set no value upon a tank to receive the liquid which draws from the open yard; I prefer a rather long and narrow cesspool, kept supplied occasionally with loose earth &c., for the liquid-manure to run into, the sediment from which will be absorbed by the earth &c., which may be removed about twice a-year, and used as manure for pasture and grass land. I beg, however, to say, that in all cases where the Farm-yard

is so situated, the drainage from the manure should be led on to pasture or meadow-land, for the purposes of irrigation, where a sufficient outfall can be obtained to distribute it with regularity.

The next consideration is the accommodation for the animals when not allowed to lie promiscuously in the Farm-yard. My own practice is to allow separate apartments for each, or every set of animals, during the winter months. Thus, the dairy Cows have each a shed to lie in, 12 feet by 10 feet, and space in front of about the same extent; the Heifers, also, are kept two or three together, in a similar shed, but with a rather larger space in front. The breeding Sows have each a shed to rest in, and outer space for eating green food, the same size as the pens for the cows; and each farrow of store, or fattening pigs, are accommodated in the same way.

In each and every instance, the pens are first covered at the bottom with loamy earth, about eight inches in thickness, and the manure is always allowed to accumulate under the animals, upon the principle of box feeding, taking care to litter with straw daily, as cleanliness requires, and the accumulation is allowed to continue until inconvenience arises. The manure is then removed and spread over the farm-yard, or put into heap for more immediate use if required.

As I do not intend these observations to apply to modern or recently-constructed buildings, I would here state, that in case further space is required for fattening cattle, good roomy boxes may be obtained by appropriating the corn mows of a barn; and it often happens, that in ancient farm-steadings much barn room may be dispensed with, and fitted up as cattle boxes at a trifling cost, and may be managed with nearly the same facility and advantage as first-rate buildings.

JOSEPH BLUNDELL.

(To be continued.)

WHAT A MOMENT MAY BRING FORTH.

By the Authoress of "My Flowers."

HITHERTO, I have sketched the history of persons in the more humble ranks of life as warnings or examples; but I am now going to set forth a warning taken from a higher sphere, to show that the Lord is no respecter of persons, but that His just judgments fall alike on the high and low; and that there is a "woe" unto them that are mighty to drink wine," as well as beer, and to men of strength to mingle strong drink, "whether they are rich or poor, learned or unlearned; for "the soul that sinneth, it shall die."

We do not so often observe the miserable consequences of sin in the higher walks of life. It is more out of sight than amongst those whose bread depends upon the labour of their hands; but let my cottage readers be quite sure of this, that sin and folly reap as full a reward among the nobles of the land as among the peasants; perhaps even more so; and that many a splendid carriage that dashes by, and many a splendid mansion, where gold and fulness of bread are found, contain hearts as withered, and broken, and mourning, and diseased, as any of those starving in a desolate cottage, or confined within the walls of a union workhouse.

Edward Fortescue was the son of a nobleman. His parents were both devoid of principle, and their manner of life sadly unlike what it ought to be amongst the nobility of

a Christian land. From them he could learn nothing of good; and his youthful years, both at school and college, were wild and dissipated. When he first drew particular notice he was concealing himself, under a feigned name and the appearance of a plain gentleman, from some pursuit or other; and living in a place as much as possible out of the way of former acquaintances. His countenance evidently bore marks of his manner of life; no one who looked at him could avoid seeing that he was a man of confirmed drinking habits; and his conduct soon convinced every one of the fact. It was gradually whispered, however, that he was a disguised nobleman; that his history was a pitiful one; that he had been unjustly treated, obliged to hide from his own father, who wanted to force him into signing away money and lands, and was much to be sympathized with. This drew him into society, where the quiet elegance of his manners would have made him very welcome, but for the habits he indulged in, which were constantly coming to light. Often was he picked up in the streets wholly intoxicated, and sometimes fighting with men of low and wretched character; yet two or three respectable friends clave to him, either, as he used to say "for my five balls" (meaning his future coronet), or because there were kindly qualities buried under the frightful features of his outward life. Alas! what a terrible sight it is to see vice triumphant in high places! To see the young, educated, titled man, a slave in its grasp, and sacrificing all the talents the Lord has given him—station, wealth, power, and influence—to debasing passions, instead of spending them in the service of God and to His glory!

Little did poor Mr. Fortescue dream of the end of his wretched earthly career! Little did those who laughed, and danced, and associated with him, dream of it either! He went on recklessly in the downward path, never attended the means of Grace, or the sound of the Gospel, at least while we were acquainted with him; and if a terror ever crept into his heart he must have drank it away. Oh! let my readers pause one moment, to think of this manner of using "things temporal!" Is it not *too surely*, to "lose the things that are eternal?"

Years passed away; and Mr. Fortescue still lived on in the same manner, sometimes abroad, sometimes at home; but always under his feigned name, and in his usual wretched habits. He had formed a close intimacy with one family, whose eldest son, though quite unlike him in outward things, had been his great friend from their first introduction, and with this family he passed most of his time, when he was, as he called it, at home.

When about to return from France, for the last time, as it sadly proved, he wrote to his friend to announce his arrival, saying, with a thoughtlessness and presumption only too common with us all, "On that day, without fail, you will see me at your dinner-table." "Go to now, ye that say, To-day, or to-morrow we will go into such a city, and continue there a year, and buy, and sell, and get gain: whereas ye know not what shall be on the morrow. For what is your life? It is even a vapour that appeareth for a little time and then vanisheth away. For that ye ought to say, If the Lord will, we shall live, and do this or that."

Mr. Fortescue took his passage, and had a prosperous waft across the channel. On arriving in the roads, the tide did not quite serve for the little sailing-*packet* to enter the pier, and they tacked once or twice in consequence. Most of the passengers, glad to get out of ship, landed in the boat, but Mr. Fortescue, who was bringing over some valuable articles belonging to a friend, chose to remain with his luggage, and see it safely landed himself. In a very short time the tide served, the little vessel made her last tack, and was entering the mouth of the pier. Surely all was safe and secure! At that very instant of time a sudden chop-round of the breeze took the vessel aback; she struck against the pier, and went down before the eyes of the horrified spectators. Mr. Fortescue could not swim, and perished! The last that was seen of him was as he stood on the deck with his portmanteau in his hand, surprise and horror stamped on his face. No time was allowed for an effort to escape, or he might almost have sprung from the vessel's side to the shore. No time was allowed for more than a full sight of his awful position on the brink of

terrific destruction. Oh! who can describe the horror of that sight—of that unlooked-for, unprepared-for moment!

Thus closed a life of recklessness and open sin. In the very moment that seemed most smooth and safe, destruction came. Who can reckon on a day; an instant? "Be ye ready; for the Son of Man cometh at an hour when ye think not."

Readers—we may all learn a deep lesson. We may not be living, perhaps, in *outward* sin; but we may be quite, quite as unfit to die as this young nobleman. Inward sin is quite as impure in the sight of a holy God as the most desperate outward wickedness; let us remember *that*. The Lord is no respecter of person; there is neither high nor low in His sight. "The soul that sinneth, it shall die." But what a death it is! and how suddenly it may come rushing upon us, just when we are saying, "Peace and safety!" There is *no* peace, there is *no* safety to any but those who are gathered under Almighty wings. Are we sheltered there? Have we fled for salvation to Him who died to purchase it for us? We are all trying to walk on the waves of this troublesome world, somehow or other; but we cannot do it long. We *must* sink, if the hand of Jesus Christ is not stretched out to save us. We may think we are just entering the heavenly port; but the breeze of hope will chop right round, readers, and dash us on the rocks, unless Christ is in the ship; unless we have a firm hold of Him; unless He is our Hope and our Salvation. Let this solemn warning rouse us to seek Him while He may be found!

THE POLAND FOWL AS RECENTLY EXHIBITED.

WE may fairly assume that custom has now sanctioned the arrangement of all the regular-tufted fowls in the classes assigned to Polands, and, consequently, that the "*tufted* *Hamburgh*" is a designation applicable only to former times. By the expression, "*regular-tufted*" fowls, an exception is provided for in such cases as the *Ptarmigan*, the *Pencilled Game-fowl*, and some others, distinguished by a lark-crest totally distinct from the full, globular top-knot of the Poland proper.

The origin of this latter breed being enveloped in so much uncertainty, the advocates of the old combless Pole must not take it amiss if the line of demarcation between their favourites and the birds known to them as "*tufted* *Hamburghs*" being regarded as the cause of much needless confusion, has been, by almost general consent, and by the authority of our leading Poultry Societies, relinquished and done away with. The argument for this distinction, it would appear, rested mainly on the absence of the comb, and alleged greater size of the "*true* *Poland*," for in respect of feather, we apprehend, their case has not been established, the Spangled birds alone having thus been termed *Hamburghs*. Now, with reference to the comb, there can be no doubt that the less of it the better in any Poland fowl, and that anything approaching the huge horns that sometimes disfigure these birds is highly objectionable, as imparting a degree of coarseness to their otherwise symmetrical form. But, at the same time, exhibitors would act prudently to remember, that amputation, or reduction by the knife of this appendage, is an operation always apparent to an experienced eye, and conducting neither to their owner's credit, nor to the appearance of the birds themselves. A cicatriced wound is always left, and the space occupied by the substance removed is never properly filled up by the feathers of the crest.

The *White-crested Black Polands* of 1853 were no improvement on their predecessors, but, rather, as we think, the contrary. Condition was too often absent, even when form and feather were satisfactory. The causes that have probably induced this result may embrace their delicate constitution as chickens, and their comparatively unprofitable character as mere poultry; circumstances which have given a preference to more useful and harder fowls, few of which, however, in beauty of appearance, can claim superiority over the subjects of these remarks.

The Poland, indeed, and these observations apply equally to all their varieties, has been well styled an "*aviary bird*;"

for although greater extension of limits that would usually be implied by this term are requisite for their appearance in their best form, they are confessedly unable to rough through their existence in the same independent manner that most of our other breeds are capable of doing.

A limited portion of White has not been thought incompatible with the plumage of the White-crested Black Poland cock's tail, and has even, sometimes, been alluded to as instancing purity of blood. But to this we do not assent, considering that any fowl distinctively termed black, or any other colour, should be uniformly of that colour, any deviation, such as is here provided for by the appellation "*White-crested*," being alone excepted; bronze and red markings, in either sex, have been the just cause of many summary disqualifications. Poland "*improvers*," however, have been, of late, as busy with the top-knots, as the combs of other birds, and with precisely the same results—the disfigurement, and ignominious omission of their pens from judicial notice. The Dahlia fancier applies his curling-tongs to the petal of his much-cherished flower, and a tendency to irregularity of form is thus checked, but the abstraction of the offending portion would mar its own object. In the same way, if it is thought that a Poland's top-knot requires cleansing and arrangement in any mode previous to exhibition, no one has a right to object to this, so long as the bird is allowed to retain the full complement of its plumage, although we may gravely doubt the advantage to be thus gained if the bird is in good health; and, if otherwise, it ought not to appear under any circumstances whatever.

Those who are in the habit of thus "plucking" their White-crested Black Polands, would do well to obtain a regulative standard for their labours. As frequently every single black feather has vanished from the anterior portion of the tuft, we should be glad to learn whence their model was obtained, for we have never yet been so fortunate as to meet with any specimen of this variety, where black feathers, more or less in number, were not visible at the base of the top-knot above the nostrils.

Golden Polands have fully maintained their ground, and the fierce discussion of some few months since, "*beards or no beards*," seems, in their case, and with the Silver also, to have gone in favour of the beard. We should be curious, indeed, to learn whether the pros and cons of this knotty point, so ardently and laboriously discussed in the pages of *THE COTTAGE GARDENER*, influenced in any way the present general desires of the guardians of the public peace, who are now so anxious thus to adorn their chins and throats, and which municipal and magisterial authorities seem so unwilling to permit. What triumph for the advocates of the beard, if human bipeds thus become emulous of the natural comforts of this portion of the feathered race. An elaborate article for the transactions of a learned society must testify to this evidence of the value of poultry literature.

The beard, we repeat, is evidently popular with the exhibitors of the Gold and Silver Polands, and our own individual opinion certainly goes with them. For not merely do we regard the beard as in good keeping with the appearance of the top-knot, but our conclusion, from past exhibitions, would lead us to anticipate more birds of higher merit, in other respects, among any given number of Polands, than we should probably meet with among the unbearded. The main faults in this class, as of old, have been the imperfect character of the spangle; frequently so heavy as to leave little of the ground-colour visible, and nearly as often irregular and spotty. This remark, indeed, applies fully as much to the Silver as the Golden birds. The top-knots of the latter are among the points to which the breeder's attention should be carefully directed, for in the male birds they are seldom regular, and, to our eye, the intermixture of white with the rich, golden-orange is no improvement, but many good judges, we must acknowledge, think otherwise. Black top-knots, again, in the hens, do not harmonize with the general tone of the plumage; for whether the variety be gold or silver, each feather of the tuft should be clearly laced. There were some beautiful examples of this in the Silver chicken class at the last Birmingham meeting.

Much that has been said on the Golden is applicable to

the *Silver Poland* also. From the results of the past year, we should assume that it has been found an easier task to breed first-rate birds of the latter than of the former variety, especially with respect to feather. The comb, however, has here been apt to run coarse; and too many pens have been shown in such condition as could only ensure disqualification.

With the Silver birds the Poland classes usually terminated, but several Societies have now adopted an additional class for "*Polands of any other variety*," to obviate the confused medley of several fowls of undoubted Poland blood in the class "for any other distinct breed." At present, we are certainly inclined to think enough has been done for them, though their claim to this distinction was in every way founded on reason. We say this advisedly, since a specific difference between some of these sub-varieties has been positively asserted. Now, we are perfectly willing to admit, that with regard to Polands, as, indeed, to all other fowls, we have much to learn, for the confusion from which what we do know has been gradually elicited, is sufficient ground to avoid the expression of too dogmatical an opinion on matters when the premises admit of so much uncertainty. But can we assert as a fact, that these white, black, buff, and other varieties hereafter-to-be-mentioned, are, indeed, "*distinct permanent varieties*?" Careful selection, for many generations, may have done much to establish a near approach to uniformity of plumage, but as yet, we apprehend, this evidence is far from complete; and "*original distinction*"—by which is implied a separate existence from all such very remote times—will hardly, we suppose, be here asked for. The Bearded-white birds (not to be confounded with the "*Albinos*" from the White-crested black) though carefully secluded from other fowls, have thrown many imperfectly-spangled chickens; and rumours attach the same suspicion (for we have not ourselves had ocular demonstration of the fact in this instance) to the buff and black birds.

The latter, however, are strikingly handsome; and, when in good condition, are a feature in any exhibition. Comparatively few specimens have been shown; but, if we remember rightly, Leeds had an excellent pen.

The *Bearded-white*, again, have many friends, and have proved attractive objects on many occasions. The regularity of their top-knots is seldom surpassed, and they are birds of a stout vigorous habit. The point, however, in which they appear to least advantage is the contrast between their blue legs and dark bills with the white plumage. A light-coloured bird requires, in every case, a light-coloured leg, and fortunately for the white Shanghaes and Dorkings, the family colour of the extremities suits that of the plumage.

Of the Buff or *Yellow Polands with White lacing*s, enough is not yet known to speak positively of their merits. In those that have been exhibited, the colours have not been sufficiently clear; and hence a confused effect. We are inclined to believe, that had the yellow been of a somewhat darker shade, the contrast of colour would have been better. But in this, as in all other instances where Polands are concerned, it would be unfair to judge of any variety merely from young specimens—form and feather continuing to improve up to the third, if not, indeed, to the fourth year.

Rumours of the reappearance of the *White black-crested Poland* have been abroad during the last year, and one or two fruitless expeditions on the part of keen fanciers were thereby induced. A pen of white birds, with dusky top-knots and hackle, were the only evidence, at Birmingham, of any efforts towards the restoration of this, seemingly, lost race. But these we allude to gain little hope of better things from the same source—the character of the hackle—even supposing the top-knot had been good in colour, being totally at variance with the object in view—a plumage of uniform white contrasting with a perfectly black crest.

There were, also, at Birmingham, good pens of the *Blue Polands with white-crests*, and some spotted, or rather mottled, birds of the same family, both shown in good condition, and deserving notice for this unusual feather. A pen of *Cuckoo Polands*, also, were there exhibited.

If it cannot be inferred, from what has now been said, that Polands, in their different varieties, have equally profited by the skill of the breeder with some other families of our fowls, we are certain that this has happened from no lack of

attention, nor want of appreciation of either their merits or their beauty. But the reason must be sought for in the difficulty that is so generally complained of in rearing their chickens, and their extremely slow growth, points which the utilitarian character of the present day will not dispense with even in the details of our Poultry-yards. As profitable poultry, we can say little in favour of the Poland; and thus we are not surprised that the anticipations of many of their sanguine admirers in the earlier part of the past year, which led them to expect greater popularity for their favourites than they have since attained to, have proved groundless. If the Shanghai, whose rapid upward course was in a great measure attributable to the idea of its profitable character, has been somewhat dimmed in its hitherto triumphant course, its competitors have been the useful Dorkings and Spanish; and birds of feather only, Polands perhaps more especially, have failed to gain the vacant place, however meritorious in the eyes of those who are attached to birds of this character.

ARABIAN LAUGHING PIGEONS.

WE have now in our possession a pair of these curious birds. The cock bird is pale blue, with very beautiful and a very strong metallic iridescence on the neck feathers. The hen is mottled blue and white, and much smaller than her mate. They are under the average size of Pigeons, and have red unbooted legs. The beak is somewhat more hooked than usual, but otherwise there is nothing in their appearance, to an unpractised eye, distinguishing them from a common Pigeon. Their varied cries, however, are certainly extraordinary. Some of the notes are those of a loud, coarse laugh; but it is, when they are much alarmed, more like a hoarse clamour.

The gentleman from whom we have received the Pigeons writes as follows:—

"Their originals I bought and sent home by ship. They come from Arabia, and cost me two dollars per pair. They vary in colour, being mostly blue, red, and white. I have bred them white, pied-blue, and mottled.

"They stand our climate tolerably well. The different sounds they make are very strange, and when breeding they utter several different kinds of cry. Indeed, any one that had never heard them would be puzzled to know what was the cause of the sounds they make, and I think you and your friends will be very much amused to hear them, as my friends have been. They would not have thought Pigeons capable of making so many different sounds. I feed them with wheat, tares, barley, and a little hempseed, once daily. They are fond of different kinds of greens.

"I dare say you will not hear them for a day or so, until they get accustomed to your place. In addition to this, if they are disturbed at night they make those laughing sounds, and should they see a light they immediately commence, being thus almost as good as a house dog. One night I was aroused by them, and knew that some one was in their place, and on getting up found my man had got up much earlier than usual to commence his brewing. This set them all in full cry, and in one respect they are better than a dog, for they are not so easy to quiet.

"Those I have bred in this country stood the climate pretty well, but I find that it is better to keep both them and the English Fancy Pigeons shut in when it is very cold, or very cold and wet with it. I find neither my Pigeons nor poultry stand the damp, cold weather well, especially when the wind is either in the north or east."

CEDAR OF LEBANON, AT STANFORD COURT.

A CORRESPONDENT in THE COTTAGE GARDENER for January 26, page 328, in speaking of remarkable trees, states that in the county of Kent there are some fine old Yew Trees, and he also states there is (what he thinks) the finest Cedar of Lebanon he has ever seen, but he does not state the dimensions. Now, I would beg to inform "A correspondent" that there is growing in the kitchen-garden, at Stanford Court,

Worcestershire, a Cedar of Lebanon, which I think there are few in England equal to; at least, I have not heard of any; the dimensions of which are as follows:—Height, about seventy-five feet; circumference at two-and-a-half-feet from the ground, nineteen feet; diameter of branches, one-hundred-and-twenty-two feet the one way, and about eighty-five feet the other way, and covering a circle of ground measuring three hundred-and-eighteen feet.

Although the size of the trunk may not appear very large, it must be borne in mind that is the smallest part between the root and branches, which are only five feet from the ground. The main feature of this noble tree is the enormous length of the lower branches, which are supported by strong props, the present number being twenty-five. This fine tree was planted in its present situation about the year 1749, rather more than one hundred years since; the soil it grows in is a very deep strong loam; the soil, indeed, seems to supply the necessary food, for the Cedar seems perfectly at home there. This tree would, I have no doubt, have been much handsomer, but the heavy falls of snow that we had some ten or fifteen years since deprived it of several of its largest upper branches.

I should be glad to hear, through the medium of THE COTTAGE GARDENER, where the largest and handsomest Cedar is to be found in England, together with height, width, and breadth of ground it occupies.—C. X.

[We shall be much obliged by descriptions of Trees, distinguished for their size, beauty, or local traditions.—Ed. C. G.]

DISCREPANCY IN JUDGMENTS.

GOLDEN-PENCILLED HAMBURGHES.

WILL you kindly permit me space for a few lines in your paper. I am anxious to know which is the chief point in a Golden-spangled Hamburg cock. I have asked many judges, but they have all been of different opinions; perhaps some of your kind readers will enlighten me on the subject. Last year I bred for ear-lobe and bronze-tail, with great satisfaction. I witnessed the result, and obtained first prizes at the Baker-street, and Surrey summer shows. I exhibited the same birds at a small show soon after, and was beaten for the first prize. The cock in the first pen had certainly a tail of nothing but bronze, though in every other respect was nothing of a bird; he had no white ear-lobe, a comb almost round, with scarcely any point, and had bad carriage, too. With reference to the pullets, there was no comparison. Upon enquiry why these birds had the first prize, one of the judges remarked—"Oh! that bronze-tail will take a prize anywhere." But notwithstanding this, my opinion is, that a bird with a good ear-lobe, a good pointed comb, tail nicely edged with gold, and perfect carriage, ought certainly to go before a tail of all bronze, if the birds be deficient in other points. No doubt, many of your friends will benefit, as well as myself, if some of your kind readers give us their opinion upon the matter.—LIVE AND LEARN.

POLMAISE HEATING.

I READ every word of your very valuable Periodical, and I never consider my week's work properly over if I omit the doing it, but absence from home prevented my seeing your number for the 8th of December, in which Mr. Golightly has come down so heavily upon my favourite Polmaise, and my attention was only called to his charge a few days ago. I am afraid Mr. G. will have begun to think that no one doubts what he has said. I am, however, glad to see, by your publication this week, that I shall not be the only champion for Polmaise.

I warm my house by Polmaise, and no one could tell that they were not in the natural heat of summer; in the Pine stoves the air may be kept at any degree of moisture, by the tank for water directed by Mr. Meek to be placed in all Polmaise stoves, and by the application of water on the floors of the chambers under the beds over the walks.

There is no smell, unless, as I admit, some accident has

happened to the flue, but that is readily cured in a few hours. If the houses are properly constructed, you may heat the bed without increasing the temperature of the house, and by admitting air by the flues beneath the bed, which should lead through the outside wall, you can have any amount of fresh air into the house, day and night, slightly warmed.

As to the scorching, singing, roasting, blistering, blotching, and curling, I am quite sure that they are not to be attributed to Polmaise. It is very strange, that houses so frequently suffering, according to Mr. Golightly, from the inroads of sulphur, should be such fruitful nurseries for red spider, thrips, and scale. I had an impression the red spider would infest an open Peach wall, certainly beyond the reach of Polmaise, unless well looked after, and I have formerly had the foliage of Peach-trees entirely destroyed by it. As Mr. Golightly and I reside in the same locality, I should much like to see his unfortunate Polmaised houses, and argue the merits of the system with him on the spot. You may, if you please, exchange my address with him for his own.—T.

PICKLED NASTURTIUM LEAVES.

IN a recent article, by Mr. Fish, on the subject of Capers, he observes, that Nasturtiums form an excellent substitute for the favourite adjunct to boiled mutton. He does not, however, mention a fact of which probably many of your readers are unaware, namely, that *Nasturtium leaves* are equally available for the above-mentioned substitution, with the green *Nasturtium* seeds usually employed.

All that is necessary is to gather the healthy leaves at any period of their duration and to bottle them in vinegar; a proportion of these being chopped up and mixed with the melted butter, when required for use. The plant intended, is the common garden *Nasturtium* or Indian Cress, the *Tropaeolum majus* of botanists, and not any species of the dissimilar genus *Nasturtium*.—M. C.

GOATS.

MILK is becoming, with other necessary articles of food, dear and of bad quality; and it is desirable that labouring men with families should be aware that, where they have a little outlet, or small inclosed garden, a goat or two may be kept so advantageously as to abolish the "sky blue" and milkman's bills together.

On the continent, and especially in the North of Germany, Goats are kept to a very great extent, and they are of large size, giving a very considerable quantity of milk, which every one who has tasted it knows to be of the best quality.

I was speaking on this subject, this day, to an intelligent native of the Black Forest, and he informs me that there every poor person has a Goat, which browses on the Forest in the summer, and stays at home during the winter, in a shed, giving milk for about eight months in the year. In the summer they are driven out at six o'clock in the morning, fetched in to be milked at eleven; kept in the shed during the heat of the day; driven out again about five; and brought home and milked again about eight. In the winter they are milked only once, and fed principally upon rough hay: but in such localities the country is wild and uncultivated to a great extent, abounding with rocks and plants, to which the animal is very partial; and in such places no material mischief can be done.

This is the difficulty in an enclosed and highly-cultivated country like England, for Goats are so mischievous that they would not be permitted to be at large, and it would be most praiseworthy on your part, if you would, in a set treatise on the subject, in the columns of your publication, point out to your readers a *practical* mode of keeping and using these hardy and valuable animals, beginning with the *enclosure*, or place where they might be kept; their food and manner of treatment generally. They will bear almost any treatment, and have been known to *give milk* and thrive on board a ship, in stormy weather, when fed upon brown paper; and, as I have read in your pages, when fed upon pigtail tobacco, carpenters chips, and kippered salmon; so there is no diffi-

culty where a man has a garden. There is the *prejudice* to be got over, and perhaps that is the greatest obstacle of all; and where *servants* (?) have to milk them, I don't know what would be done; for servants, now-a-days, through learning so much, are above their calling, and can with difficulty be found able to milk cows, or fit (as Cobbett says) to take care of a cat. Indeed, in this neighbourhood, there is so much bother about education, that I verily believe the *real philanthropists* among the promoters of it think that education will alone feed, clothe, and lodge, every human being, without any thing besides. I mean their *book* education; far different from the opposite sort of education I contemplate, namely, the teaching every child to set a just value upon every object it may come in contact with, and to take care of everything they are intrusted with, either belonging to themselves or their employers. On the contrary, they are now taught enough to enable them to read those destructive periodicals which are issued in swarms from every petty shop in almost every street, which make heroes of thieves, and attractive characters of murderers; and the effect may be imagined. I am sorry to trouble you so much; I should not have done so, but from a conviction, that in your hands the subject may be made useful to the great population of the country.—THOMAS STANDBRIDGE, Edgbaston.

[Editors ought to know everything; and we do know some little about Goat-keeping; but we shall be obliged by any one sending us the results of his experience, and mode of treatment.—ED. C. G.]

TO CORRESPONDENTS.

TREES AND SHRUBS FOR A DAMP PLACE (A. S. B.).—They might have been all planted by this time had we known your wants before. The large-leaved Alder (*Alnus cordifolia*), Cut-leaved Alder (*A. inciniata*), Deciduous Cypress, Balsam Poplar, Ontario Poplar, and the so-called Black Italian Poplar, White Willow, Duke of Bedford Willow, Brittle Willow (*Salix fragilis*), and the Goat Willow (*S. caprae*), American Plane Tree, Scarlet Maple (*Acer rubrum*), and White Maple (*A. eriocarpum*), are among the very best ornamental trees for a damp place. The Spruce Fir grows beautifully in deep, moist soils, and in low situations, far better than on dry soils. The Common Holly and all the variegated ones, will also grow in your filled-up pond; and so will *Filberts*, *Blackthorns*, and *Privets*; also common *Laurels*, to an enormous size; and round the sides, *Weeping Birch* does much better than on dry soil; and the *Deodara* grows with its roots nearly in the river, on the left hand, as you enter Oxford from London, and nothing can do better—the Willows close by do not look better. The following shrubs will do with you, and look very ornamental:—The common evergreen Berbery (*B. aquifolium*), *Magnolia purpurea*, Scarlet Dogwood, Sweet Gale, *Comptonia asplenifolia*, Snowdrop Tree, Scarlet-berried Elder (*Sambucus racemosa*), common Elder, common Honeysuckle, *Calycanthus florida*, most of the common *Rhododendrons*, *Andromeda florabunda*, *acuminata*, and others; *Pernetia mucronata*, and *Vacciniums*, all which you can get at the Nurseries; and all these names are the common nursery names by which to ask for them.

A MATCH FOR SAPONARIA (Sarah).—The white *Stee Allysium* is the only white annual that will match your pretty lace bed of *Saponaria calabrica*, and flower it out till the frost stops them both. You might have a crop off both beds before you planted out the autumnal crop, say a blue *Nemophila* and *Eucardium grandiflorum*, a bright rosy-pink flower. These two might be sown next week, and they would be in flower by the last week in May, and continue a month; then, by growing the *Allysium* and *Saponaria* in pots, sown at the end of April, they would be ready to fill the beds the day you parted with the blue and pink. There are no new annuals fit for beds that we have not mentioned in the two last volumes. The little camomile-like *Cenias*, which we spoke of, are hardly yet in the trade.

TROPEOLUM (Ibid).—No one can account for the roots of this plant not growing. It often lies twelve months dormant. Keep it a little moist till June, and try it again.

SOUTH-WALL (Ibid).—A good winter Pear is the most useful fruit; and a *Wistaria sinensis* the best flower for your wall with the east current of wind in that part of the country. *Passe Colmar*, *Winter Nelis*, or *Beurré Rance*, are among the most suitable winter Pears.

BOUNDARY BELT (Fillingham).—Large common Laurels, Privets, Hollies, and Tree Box, are the best to plant under large trees in a belt, through which you want to hide the view, but Portugal Laurels, Yews, Alaterns, &c., would not suffer from the drip of the large trees. Without strict attention to *two rules* it is perfectly impossible to establish a screen of evergreens under old, large, forest trees. The first rule is, that the plants be not less than four feet high; and the second is, that the planting be done in September, or early in October. Spring planting will not do were you to water the plants three times a day through the summer, and for this reason, the more you watered, the more you would encourage young roots from the foresters to rob your evergreens. When you plant in September, cut every root you find in the ground, make the hole rather larger than if there were no big trees, and plant a little deeper than usual, then mulch, and the old and new plantations, or rather their roots, will start on more equal terms next season.

BERBERIS ASIATICA (K.).—This is the name by which you must ask for the *Kushnuth Berbery*. It is just the plant to keep people to the path across the field. You will probably have to advertise for it. We have not the slightest idea where it is to be sold, but every nursery in which Thorns, or Quick for hedges are grown, ought to have it on sale.

POLANDS EATING EACH OTHERS' CRESTS (T. K.).—Fowls of several varieties are occasionally addicted to the habit of plucking out, and also eating their companion's feathers. We have noticed it in Shanghaes, where the birds having been kept without a proper supply of animal food, the young feathers immediately after moulting are taken as a substitute, and the practice thus acquired is rarely extinguished. But Polanders seem to be specially given to this vexatious trick, particularly in the exhibition pen, as if it were a mere divertisement to while away their time. The top-knot, however, being here the favourite point of attack, some disfigurement ensues, for which, when the practice has become habitual, we know of no effectual remedy. In the cases before alluded to, the provision of the proper diet would have, probably, obviated the mischief, but the habit, we believe, is rarely given over.—W.

BUFF SHANGHAES (C. P.).—"Which bird would be the most profitable to breed from, either for sale or exhibition, a pullet, with its exterior feathers of a beautiful buff colour, but the under part of the feathers of a dark or slaty colour; but the other bird equally good externally, and also free from slatiness underneath?" We are of opinion that probabilities are in favour of the latter, grounding our opinion upon the fact that the less dark colouring matter there is in the plumage of the parents, the less is there, usually, in the plumage of their chickens. This increases the value of the latter, there being a taste for pure buff. In our opinion, however, a slight and regular necklace adds greatly to the beauty of a buff bird; and let it never be forgotten, that all good judges of poultry give the palm to beauty of form and high condition, in preference to mere purity of colour. We have known first-rate pure buff birds bred from slaty fluffed buff Shanghaes; and we have known dark birds come from the purest buff. This arises, probably, from a dark cross in a previous generation of their ancestors.

FLOWER-GARDEN (E. H. C.).—Your geometric flower-garden is on a capital plan, and you cannot go wrong in planting it. Keep the strongest colours, as scarlet, purple, or yellow, in the corner beds, and the rest will do with plain or mixed colours, or with borders as you propose. We never saw these exact figures for corners, but they are exactly to our liking, and we think original.

FLOWER-GARDEN (A Young Gardener).—Your plan is very good indeed, and most easy to plant, and if we did but know the entrance to it, or the side next the windows, or that from which it is most seen, we could help you a little, although we do not profess to plant a single bed for anyone. Supposing we enter by the centre walk, between 1 and 2, then the first two beds, 4 and 5, should be with the same plants, in mixed and subdued colours, as Heliotrope, and some grey Verbena, or Mangle's variegated Geranium, or any other variegated Geranium, with or without other mixture; recollect, the two must be exactly alike, and they must neither be scarlet, nor yellow, nor strong purple. 11 and 12 must be alike, and so must 17 and 18, also 24 and 25, and anything you please may be in all these, except scarlet, yellow, and reddish-purple. *Emma* Verbena, and any grey or light Verbena would be very proper for any of these pairs. Then the circles 8 and 21 to be of a different colour from any of the pairs or match-beds along this centre; white, yellow, scarlet, blue, or even green, will do for these two circles, and each of them must be of one colour, but the two need not be of the same colour. 3, 10, 16, and 23 should have scarlet, yellow, and bright purple, with or without borders of an opposite colour; and if you could manage the same colours, but with different plants, for 6, 13, 19, and 26, you would be perfect as far as it is possible for that figure. 14 and 15 depend on the colours in 8 and 21. There ought to be four distinct colours in these four circles—1 and 2 to be the same colour, 7 and 20 ditto, 9 and 22 ditto, and 27 with 28 ditto also. Each of these pairs ought to be of a different colour from that in each of the two large beds next to them; but, as we do not know what those large beds may be, all we can do is to say, plant all the pairs with neutrals, or dark blue, dark purple, or pure white; but recollect, all this depends on entering at between 1 and 2, or between 27 and 28. Your plan will be engraved some day.

POULTRY JUDGES (George Crocker, Plymouth).—It has been wisely determined that Judges at Poultry Exhibitions are not bound to give the reasons for their decisions, excepting only in such cases as an exhibitor, feeling himself aggrieved by the awards, appeals to the committee or managers, who, if there appear just cause, would then refer to the Judges. We cannot doubt but that in any instance of this kind the required information would be immediately afforded, but the application should be made at once. The Rev. G. Hodson was the Judge at the Plymouth Exhibition in January last.—W.

CRAMP IN CHICKENS (Miss C.).—Nothing causes this more commonly than allowing them to be at night or during the day on a brick floor. When under cover nothing is better than a floor covered with dry sand and a very little hay scattered over, and a little green food daily. Removing the chicken attacked into a warm place, and giving it half-a-teaspoonful of brandy is the best remedy.

FIRS (M.).—Those you mention are raised from seed, sown when ripe. They are too cheap to be worth your while to propagate them.

POMOLOGICAL SOCIETY (G. T. S.).—Write to Mr. Hogg, 13, Giltston Road, Brompton.

LUCERNE (J. S.).—Where this has failed you had better mix a little super-phosphate of lime with the soil, and sow afresh early in April.

RANDES' PRICE CURRENTS (F. H.).—You can obtain both the Horticultural and Agricultural Price Currents by remitting twelve postage stamps to Messrs. Randle, Nurserymen, Plymouth. We quite agree with you in thinking they contain a large amount of information. Embracing as they do cultural directions, an almanack, and advertisements, they differ essentially from a common catalogue of plants.

GAPES (Fuller).—When Mr. Tegetmeier directs for the cure of this disease that the fowl be made to inhale the fumes of spirit of turpentine

"as long as it can withstand its influence," he means until it gasps for breath, which you can perceive by raising the lid of the box in which it is being exposed to the fumes.

VARIOUS (Ibid.).—You must write to Capt. Hornby for prices. The most economical feeder is a trough placed behind a palisade, so that the fowls can reach it with their beaks but not with their feet. We have no experience of wicker nests. It is quite immaterial what wood false nest eggs are made of, because they must be painted white.

STURGEON'S SHANGHAES (Helen).—We believe Mr. Sturgeon was dissatisfied at some decisions where he exhibited, and, as he had abundance of laurels, he could afford to withhold from exhibiting. We hope he will determine otherwise this year, for his birds, as a whole, have never been surpassed.

BECK'S GEM (A Subscriber, Tavistock).—You will have seen what a correspondent said last week as to the restricted supply of this Pea.

ARTIFICIAL MANURE FOR POTATOES (Cantab).—You ask "which is the best for them?" Yet you do not say a word as to the nature of the soil. You might as well ask a physician what is the best medicine for you, without giving him the slightest further information. We never manure for Potatoes, but grow them on plots rendered sufficiently fertile by the manuring for previous crops. If we were obliged to manure for Potatoes, we should select a light, poorish soil, and apply at the rate of forty bushels of soot, twenty bushels of common salt, and two cwt. of Epsom salt per acre.

PLAN OF MELON AND CUCUMBER HOUSE (John Carne).—"The use of this, in No. 259, is frustrated," you say, "as we are left totally in the dark as to the expense of such a building." We have given, several times, the general price of articles—beyond this we do not feel it to be our province to go. Several times we have calculated, for ourselves and others, what such and such buildings should cost, and have been frequently put out by the structure costing more or less than we bargained for; these being greatly influenced by the locality, and changes introduced by the owners. Tradesmen would do better to state what such and such sized houses could be put up for. Meanwhile, if the obliging subscriber who sent the plan, No. 2, 259, would also send an account of the expense the house as it stands cost, he will confer a great favour on many readers.

MUSCAT AND BARBAROSSA GRAPE FOR A LATE HOUSE (E. M.).—You are quite right—the *Muscat* will require more heat than the *Barbarossa*, but still we would plant one house of equal parts of both, in preference to one alone. We have set *Muscats* very well, though on the next rafter were *Hamburgs*. You may keep the *Muscats* at the warmest end, and just give a little less air there when the fruit is setting.

ORANGE TREE (W. M. S.).—We are rather doubtful whether you have raised it from seed or from a cutting, as these are called pipings by some florists. If the former, you will not easily fruit it in a window, and had better have it inarched or grafted with the *Otaheite*, the *Lemon*, or any free-flowering variety. If you wish to try it as it is, give it all the light you can, sponge its leaves frequently, water with manure-water, or give a rich top-dressing, inure to air, and by the middle or the beginning of June set it out-of-doors, in a warm place, against a fence; give it plenty of water there, and house again by the beginning of October; and very likely, next spring, you will get blossoms, to be followed by fruit. The first will be delightful, the second of little use.

GLAUBER SALT FOR POTATOES (A Reader).—The ashes of the tubers of Potatoes contain about 56 per cent. of Soda and Potash, combined with Sulphuric and other acids. We know of no experiments upon Potatoes with Glauber Salt (Sulphate of Soda). If you employ it, sow it by the sides of the rows when the Potatoes are well up in the spring. Do not use more than 2 lbs. for every thirty square yards.

SCALE ON APPLE AND PEAR TREES (A. B. W.).—Yours is the *Muscle Scale*. Try applying spirit of turpentine by means of a hard brush.

CANCER (E.).—It is quite impossible we can publish the information you require, but if you will enclose your address in a stamped envelope directed to "The Authoress of My Flowers," it shall be forwarded to her unopened.

CANARIES' NESTS (E. G.).—Wool, dry moss, and horse-hair are best for them. We knew Canaries loose in a room that built their nest on a cornice from the thread, &c., in a lady's work-box.

BRAHMA POOTRA COCK (H. S.).—We cannot give you any "marks" whereby you may distinguish him from "Cochins or Shanghaes," because we are more and more convinced that the so-called *Brahma Pootras* are nothing more nor less than "Cochins or Shanghaes," with white plumage, and sprinkled more or less with black feathers. The good points of the *Shanghae* are also the good points of the *Brahma Pootra*. *Chickens* should have very slightly moistened Indian and barley meal, mixed with chopped egg, for the first three or four weeks. After that they may have varied food like the full-grown fowls.

WORK ON FARMING (A. W. W.).—Morton's *Cyclopaedia of Agriculture* will best suit you.

GAS TAR, OR ASPHALT (S. H.).—Flooring, or paths, made of this are not injurious to fowls.

INTENTIONS (A Cottager).—All your purposes are most excellent, and ought to succeed, but we do not see how we can advise you. We are ready to answer any specific question.

LONDON: Printed by HARRY WOOLDRIDGE, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published by WILLIAM SOMERVILLE ORR, of Church Hill, Walthamstow, in the County of Essex, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—March 2nd, 1854.

RENDLE'S PRICE CURRENT.

Opinion of George W. Johnson, Esq., the Editor of the "Cottage Gardener":—

"Your Price Current, so well got up, is excellent, and full of useful information."

RENDLE'S PRICE CURRENT.

Opinion of Mr. George Glenny, the Editor of many of the leading Horticultural publications of the day:—

"THE TRADE CATALOGUE.—No documents are more interesting to the gardener than the catalogues of the trade, when such documents are original. They have ceased to be plain lists like each other, and already assume more important forms.

"RENDLE'S Price Current is a complete work, containing, independently of the lists and prices of everything, a history of the leading subjects, with directions for Culture, a general Calendar of Operations for the year, and a mass of information appertaining to the garden. The Seed Catalogue is on a plan of selection, giving assortments at various prices for large and small establishments, and there are many pages of Advertisements. It is a great improvement on the one last year."

RENDLE'S PRICE CURRENT.

Opinion of Mr. Jennings, Head Gardener to Earl of Derby, Knowsley Hall, Prescot:—

"Your arrangement of the Calendar reflects great credit on you, and must have proved a heavy task. The remarks about rotations, preparers, &c., will lead to much good. You really deserve the best wishes of all gardeners for the task you have performed in so masterly a manner."

RENDLE'S PRICE CURRENT.

Opinion of Mr. D. Benton, Surbiton, Kingston, Surrey, one of the most popular Horticultural writers of the day:—

"I have a copy of Mr. RENDLE'S Price Current for this year, and I can tell you at once that it is the most useful Catalogue and Calendar that was ever sent out from any house of business in our line, and I do not see what more you could add to it by way of usefulness. How different from the bare-bone lists to which you and I had access when we first took to the spade on our own account!"

RENDLE'S PRICE CURRENT has been already favourably noticed by the following Newspapers and Magazines:—

"Mark-Lane Express," "The Lady's Newspaper and Pictorial Times," "The Florist, Fruitist, and Garden Miscellany," "The Gardener's and Farmer's Journal," "The Agricultural Magazine," "The Plough," "Lloyd's Weekly Newspaper," "Plymouth Herald," "Exeter Gazette," "Bristol Mercury," "Western Luminary," "Somerset County Herald," "The Clerical Journal," "Cornish Telegraph," "Plymouth Mail," "Devonport Telegraph," "Somerset Gazette," "Western Courier," "Teignmouth Gazette," "West Briton," "Portsmouth Times," "Naval Gazette," "Southern Florist," "Midland Florist," "Stockport Advertiser," "Liverpool Advertiser," and several other Newspapers and Magazines.

RENDLE'S PRICE CURRENT.

Opinion of Mr. Hamilton, the well-known Author of the "Hamiltonian System of Pine Culture," &c.:—

"Your descriptive remarks in RENDLE'S Price Current, together with the mode of handling the subject, eclipses everything of the kind ever published to the gardening world in that form. It will be invaluable to the young gardener and the amateur, and every practical gardener should have it as a reference. My opinion is that it will be exceedingly useful to seedsmen, and I believe that when it is known, almost every seedsmen in the kingdom will purchase it."

RENDLE'S PRICE CURRENT.

Opinion of the Editor of the "Florist" for February, 1854:—

"RENDLE'S Price Current and Garden Directory for 1854 contains elaborate descriptive lists of vegetable and flower seeds, in addition to much other useful matter, not the least of which is a Calendar of Operations by Mr. Errington. We can only hope the information Mr. RENDLE puts before his customers may meet with a hearty response."

THE ROSE GARDEN,

By WILLIAM PAUL, of the Nurseries, Cheshunt, Herts.
"Infinitely the best work ever written on the Culture of the Rose."—
Botanic Garden.

By the same Author, price 1s,

AN HOUR WITH THE HOLLYHOCK.

London: PIPER BROTHERS & Co., 23, Paternoster Row; and all Booksellers.
New Edition, Price 8d; or by Post, of the Author, Kelsale, Saxmundham, Suffolk, 1s.

READ'S GARDEN ENGINES, SYRINGES, ETC.—When an article of real utility attracts public attention, IMITATORS start into the field to snatch from the inventor the just reward of his labours. It has now become a daily practice to exhibit in the windows of ironmongers and others, Syringes of the very commonest description, with the words

"READ'S PATENT,"

as an inducement to purchasers. This, as an eminent writer on Horticulture has recently remarked on the subject, is indeed "living upon another man's fame."

READ'S Instruments have the Royal Arms, with the address, 35, REGENT-CIRCUS, LONDON. Description sent post free.

RENDLE'S PRICE CURRENT.

Opinion of Mr. W. Tillery, Gardener to His Grace the Duke of Portland, Welbeck:—

"My dear Sir,—I beg to return many thanks for the copy of Rendle's Price Current and Garden Directory for 1854. As far as my experience goes, I think your Calendar of Operations excellently planned, and the Directions are judicious and quite up to the mark for the present progressive period. The remarks on the systematic rotation of vegetable cropping are likewise excellent, and will do much good if carefully put into force.—Yours truly,

"To Mr. Errington.

"W. TILLERY."

RENDLE'S PRICE CURRENT.

Opinion of the Editor of the "Ladies' Newspaper and Pictorial Times":—

"RENDLE'S PRICE CURRENT for 1854.—This is one of those publications which, from their practical utility, are sure to recommend themselves among the large class to which they appeal. Their usefulness is their great recommendation, and no one connected with gardening or horticultural operations can do without such works. The proprietors of RENDLE'S Price Current have received so much encouragement from the great success of their publication in former years, that it has stimulated them to make the present in every way worthy of the distinguished patronage enjoyed, as well as to support the high position they have gained in connection with it. Messrs. RENDLE not only give a complete catalogue of prices of the various seeds, but much useful and practical information connected with gardening. Generally, and in practice also, we may refer to the operations of the month; the present one (January) we extract in another portion of our paper, as a sample of the useful matter contained in the work, which is heartily recommended to all our fair readers who take a pleasure in the pursuits of gardening."

RENDLE'S PRICE CURRENT.

Opinion of the Editor of the "Midland Florist and Suburban Horticulturist":—

"We had last year to praise the very excellent Descriptive Catalogue of Seeds issued by Messrs. W. E. RENDLE & Co., of Plymouth. We have had the one for the present year just sent us. It certainly is the best of the kind which has ever come under our notice, and to proprietors of gardens, whether large or small, must prove eminently useful. Under the head of each Vegetable are enumerated the best varieties, with its native country, proper mode of cultivation, &c., combining the most improved systems up to the present time; added to which are Lists of Flower Seeds, proper modes and hints on sowing, with a very complete Calendar of Operations by Mr. Robert Errington, gardener to Sir P. Egerton, a sufficient guarantee of its excellence."

RENDLE'S PRICE CURRENT.

Opinion of Mr. James Barnes, the well-known Gardener to the Right Honourable Lady Rolfe, Bickon:—

"Dear Sir,—Your Price Current has just come safe to hand, and I beg to return my best thanks for the same. It contains a great deal of useful information for all classes, more particularly for the Amateur and those who cultivate their own Gardens and Allotments.—Yours, &c.

"JAMES BARNES."

RENDLE'S PRICE CURRENT.

Opinion of the Editor of the "Southern Florist," Feb., 1854.

"This work or pamphlet, as the title indicates, constitutes a Descriptive Catalogue of Vegetable and Flower Seeds offered by the firm of RENDLE & Co., of Plymouth; but while it contains all the useful matter found in a Catalogue, copious descriptions of the newest and most approved Seeds are given, together with a mass of sound and useful information, which cannot but be valuable to the Amateur as well as the practical Gardener. It contains an Almanack for the year, a copious Calendar of Operations for each month, directions for Rotation, Cropping, &c. &c., and is stamped to go post free to any part of the United Kingdom—forming a complete newspaper of over 50 pages of useful matter."

RENDLE'S PRICE CURRENT.

Opinion of the Editor of the "Mark Lane Express":—

"An annual publication or Trade Catalogue of Horticultural Seeds, with lists and prices of sorted collections proper for large, moderate-sized, and small gardens; containing also various excellent hints and practical observations on the best modes to be pursued in the proper cultivation of general garden productions."

SUTTON'S FINE LAWN GRASS SEEDS, FOR improving Old, or making New Lawns. Price, 1s 3d per pound, 3s per gallon, or 21s per bushel. Two-and-a-half bushels (or forty pounds) is the quantity required per acre, for forming a new Lawn.

The following is an extract of a letter received from Dr. Lindley, the greatest Horticultural authority of the present day:—

Messrs. Sutton,—We have already made trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years. (Signed) JOHN LINDLEY.

Horticultural Society, Regent Street, London, Nov. 9, 1853.
We are almost daily receiving similar letters to the above, and have great confidence in stating that the sorts of Grass Seed we sell in our "Fine Lawn Mixture" are the finest and purest in cultivation.

Quantities of 20s value and upwards are sent carriage free.
JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, Desert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 15s per Hundred, or Twenty-five each of any two sorts for 10s, plus insured. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement, *Gardeners' Chronicle*, Jan. 28, 1854.

Egglescliffe, near Yarm, Yorkshire.

WEEKLY CALENDAR.

M D	D W	MARCH 9—15, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
9	Th	<i>Carabus catenulatus.</i>	30.158—30.141	56—36	S.	—	30 a 6	51 a 5	4 24	10	10 47	68
10	F	<i>Carabus nomoralis</i> ; garden.	30.191—30.151	55—27	S.W.	—	28	53	5 6	11	10 32	69
11	S	<i>Nebria brevicollis.</i>	30.173—30.083	56—35	E.	—	26	55	5 38	12	10 16	70
12	SUN	2 SUNDAY IN LENT.	30.030—29.906	56—28	E.	—	23	57	6 3	13	9 59	71
13	M	<i>Elaphrus riparius.</i>	29.823—29.622	61—37	S.	36	21	58	6 24	14	9 43	72
14	Tu	<i>Bembidium flavipes.</i>	29.627—29.515	50—35	S.W.	18	19	VI	rises.	⊙	9 26	73
15	W	<i>Bembidium puncticolle.</i>	29.616—29.525	52—32	S.W.	—	17	2	7 a 3	16	9 9	74

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 50.6° and 33.6° respectively. The greatest heat, 68°, occurred on the 9th in 1826; and the lowest cold, 7°, on the 10th in 1847. During the period 114 days were fine, and on 75 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 353.)

CARDAMINE.—LADY'S SMOCK.



GENERIC CHARACTER.—*Calyx* a little unequal at the base; leaves oblong-egg-shaped, blunt, slightly spreading, de-

cious, two of them protuberant, in some degree, below their insertion. *Petals* reversed-egg-shaped, rather upright, undivided, tapering at the base into short claws. *Filaments* awl-shaped, simple, the two shortest with a gland at the base, next the calyx. *Anthers* small, oblong-heart-shaped, acute, curved back. *Germen* line-like, slender. *Style* scarcely any. *Stigma* blunt, entire. *Pod* stalkless, erect, line-like, compressed laterally; valves flat, without ribs, scarcely narrower than the bordered partition, bursting elastically from the base, and mostly curling back. *Seeds* egg-shaped, not bordered, inserted alternately in a single row; their stalks simple, short and slender; cotyledons accumbent.

CARDAMINE BELLIDIFOLIA: Daisy-leaved Lady's Smock; Daisy-leaved Cress; Alpine Cress.

Description.—It is a perennial. *Root* rather woody, divided at the crown. *Herb* two or three inches high, unbranched, erect, bright green, smooth. *Leaves* simple, egg-shaped dark green, entire; the root ones much shorter than their footstalks, sometimes a little wavy or angular, the uppermost nearly stalkless. *Flowers* few, flat-bunched, terminal. *Calyx* purplish. *Petals* white, erect. *Style* short and conical. *Pods* hardly an inch long, crowned with the round-headed stigma, on a short thick style, strap-shaped, blunt, and smooth.

Time of flowering.—August.

Places where found.—Many errors have occurred about this plant, *Turritis hirsuta* being mistaken for it, but Mr. Milne found species of it wild in Scotland, and Dr. Withering, jun., says—"Of these being genuine there can be no doubt." As it is found in Lapland, and near the summits of the highest Alps, it should be sought for far north in the British islands.

History.—The first mention of it as a British plant is by Ray (*Hist. Plant.* i. 817), who, writing in 1686, says—"It has been lately found on St. Vincent's Rocks, near Bristol, by Mr. James Newton." That botanist, however, must have taken some other plant for it, as it has never been seen there since. By the old writers on plants, it was variously called a *Nasturtium*, a *Sinapis*, and a *Cardamine*, but almost always with a specific name, referring to its Daisy-like leaves.—(*Smith. Withering. Martyn. Ray.*)

THE greatest surgeon who ever lived was accustomed to declare that he never approached the operation table without a feeling of humiliation, for he was convinced that the real triumph of his art lay not at all in performing operations, but in preventing the necessity for them altogether. Hunter's ablest follower, Abernethy, founded himself, as one may say, on this single axiom; and it was a perpetual theme of discourse with Macartney, another of the sons of the giant. We have recently met with the following highly suggestive remarks by Dr. Latham:—

"Prior to diseases; to their diagnosis; their history, and their treatment; prior to them, and beyond them, there lies a large field for medical observation. It is not enough to begin with their beginning. There are

things earlier than their beginning which deserve to be known. *The habits, the necessities, the misfortunes, the vices of men in society*, contain materials for the inquiry, and for the statistical systematising study of physicians, fuller, far fuller, of promise for the good of mankind than pathology itself."

The general aim, then, of this series of papers is not so very much out of the way—not so very unpractical as might at first appear. It must be remembered that all attempts whatever at writing popular medicine have failed. It remains to be of the public to cease to try to do that which the proverb "heal thyself" hints that the physician can hardly accomplish in his own case. But a philosophical and religious inquiry into the remoter causes of disease offers promise of more general

usefulness; and in the way of prevention, and deprecating the judicial punishment of many sins of omission and commission against the natural laws of Providence, every man has it most in his power (under Providence) to become his own physician.

Now the following popular directions for the management of sudden cases of incipient cholera, or choleraic diarrhoea, are, beyond comparison, the plainest of any yet put forward for general use, by authority. Yet to us every sentence breathes a protest against the necessity which required the promulgation of any such document at all. In truth, the true science of medicine is exhausted when once the cholera has been allowed to establish itself. Timely warnings have been unheeded; disastrous courses have been recklessly continued; and when the crash comes, as surely it will come, the business is just like that of winding up a bankrupt estate, and deprecating the just wrath of the creditor and the judge. The same is the case, to a less extent, no doubt, in the incipient stage. It has been found that timely removal to a higher, drier, purer air, aided by good plain food and clothing, is the only effective way to stop an epidemic of diarrhoea, and to prevent its becoming cholera. It may be kept down by incessant attention and physicking, and daily visiting from house to house among the poor, debauched, ill-fed inhabitants of low, damp, dirty, crowded places. So, with all hands to the pump, a leaky vessel may be brought into port with ever so many feet of water in the hold; but is it not far better, when there is a chance, to lighten the cargo and put the passengers on a sound bottom? J. J.

"DIRECTIONS OF THE IRISH COLLEGE OF PHYSICIANS FOR THE TREATMENT OF CHOLERAIC DIARRHOEA AND COMMENCING CHOLERA."

"As the malignant cholera is, in the majority of cases, quite amenable to treatment in its earliest period, or that of premonitory diarrhoea; and, as this being free from pain is apt to be disregarded, all cases of this kind should be diligently sought for and promptly treated. A judicious system of house-to-house visitation should be organised in the poorer districts in every large town threatened with the epidemic. The medical visitors entrusted with the care of the poor should carry with them appropriate remedies to be administered at once on discovering any case of premonitory diarrhoea.

"In addition to this system—by which the committee hope to check the spread of the disease at its first approach—it will be necessary to provide means of relief should cholera become epidemic. In that case, the city should be divided into a number of districts, at some convenient point of which a medical dépôt for each should be established, with a sufficient number of medical attendants to have one always on the spot, both by day and night, to administer medical relief, on application, without any recommendatory ticket, or other formality. Notices should be posted, urging all parties affected with diarrhoea to apply at once for relief; and each district, in the first instance, should be subjected to careful house-to-house visitation. In cases of destitution, there should also be given relief in the shape of nutritious food, as well-boiled rice and milk. The most destitute should be removed to hospitals.

"The services of physicians who have had experience of cholera should be obtained, and a staff of senior medical students organised to assist. Means of conveying patients safely to the hospital should be provided, available on the shortest notice. The patient should be conveyed in the recumbent posture, and vehicles on springs, with beds, and sides padded, with proper means of warming and ventilating, will be required.

"It cannot be too strongly impressed upon the public, that in the great majority of cases of cholera there are two distinct stages, and that precautions should be taken to deal with each of them as it presents itself. The diarrhoeal stage is, in most instances, manageable if treated properly.

"The moment an individual is affected with diarrhoea, when cholera is prevalent, let him get into bed, and take every precaution to maintain the temperature of the surface of his body and extremities by the application of warm blankets or other covering; bottles of hot water, or heated bricks, to his feet and hands; warm flannel swatches to the abdomen; and take a small quantity of whatever domestic stimulant may be at hand, such as punch, made with brandy or whiskey, warm negus, or mulled port wine; and let him send at once for medical aid. As a large proportion of cases occur at night, to avoid delay, we should advise all families to be provided with medicine to meet the diarrhoeal stage of the disease; and as such a medicine should be one which will not injure by keeping it should be prepared and kept in a dry form. The committee advise the following, to be kept in every house, to check looseness of the bowels in slight cases:—

"No. 1 Recipe.—*Pulveris cretæ opiatæ*, drachm ij.; Divide in *chartulas duodecim*.

"Signa. No. 1.—Twelve astringent powders. One of the powders mixed with a little milk to be taken by an adult (full grown man or woman), after every liquid evacuation, until the arrival of medical assistance.

"If the purging be sudden and violent, let one of the following pills be taken every half-hour instead of the powders:—

"No. 2 Recipe.—*Acetatis plumbi*, gr. xxiv.; *Opii*, gr. iij.; Ft. *massa et divide in pilulas duodecim*.

"Signa. No. 2.—Twelve astringent pills. One to be taken every half-hour. In cases of sudden prostration, or sinking, a dessert spoonful of whiskey, or brandy, and a table spoonful of water, may be taken every fifteen minutes until the arrival of the physician. In cases of sickness of stomach, let a large mustard poultice be applied over the pit of the stomach until it produces decided irritation. Rice milk or beef tea, with or without well-boiled rice, may be taken in small quantity in the diarrhoeal stage.

"It is not an uncommon, and occasionally fatal, error for persons attacked with premonitory diarrhoea to take castor oil, or saline, and other aperients: this must be strictly avoided.

"When diarrhoea occurs in young people, the dose of the astringent powder, No. 1, must be gradually diminished, reducing the quantity one-half for a child ten years of age.

"For diarrhoea in children under ten years of age, the committee recommend for a child a year old the following powder after every liquid evacuation, taking care not to repeat the dose oftener than every hour.

"No. 3 Recipe.—*Pulveris cretæ compositæ*, gr. ij. *Pulveris cretæ opiatæ*, gr. i.

"Misca et Signa. No. 3.—Astringent powders for children. Two of these powders may be given combined to a child from one to three years old; three to a child from three to five years of age. In a child from five to ten, this quantity might, in urgent cases, be repeated every half-hour until medical assistance is obtained. These should be given in a little milk. Where there is urgent thirst, pure milk, milk-and-water, or rice milk-and-water, may be freely given to drink. If cold water appears to produce chill, a small proportion of brandy may be mixed with it.

"Although desirous to supply information which may be readily available by unprofessional persons, the committee do not deem it expedient to embarrass the public mind with detailed directions for treatment when the disease is developed, or in the secondary state; being fully convinced that in these stages prompt and experienced medical assistance is alone to be depended on as offering any chance of recovery. They shall, therefore, only at present observe that, in some cases, the disease commences suddenly, with symptoms of great intensity, such as shiverings, coldness of the surface, great prostration of strength, cramps, with purging or vomiting, or both. In such circumstances, while medical aid is sought for, let the patient be immediately put to bed, in a well heated apartment; heat applied to the extremities by bottles of hot-water, heated bricks, &c., while a large

mustard-poultice, or a piece of warm flannel moistened with oil of turpentine, is applied over the abdomen. At the same time the limbs, both upper and lower, should be diligently rubbed, under the bedclothes, with the naked hand or with flannel. In the meantime, any convenient stimulant, such as punch made with brandy, whiskey, or gin, in moderate quantities, or mulled port wine may be taken. The following mixture is recommended as a cordial, that may be used under the circumstances.

"No. 4 Recipe.—Tincturæ Cardamom composiæ, f. 2 ounces; Spiritus Ammonię aromatici, f. 2 drachms; Syrupi Zingiberis, f. 1 ounce; miscæ.

"Signa. No. 4.—Stimulant mixture. Two teaspoonfuls, mixed with five teaspoonfuls of water, to be taken every half-hour. The patient should not sit or stand up.

"The committee do not intend to dictate a specific line of treatment for the fully developed disease; yet, as these directions may fall into the hands of persons in remote parts of the country, who may, while the medical attendant is coming from a distance, be obliged, by the attack assuming the alarming character just described, to adopt more energetic treatment;—the committee recommend, in addition to the measures directed in the preceding paragraph, that one of the following stimulant pills be given every half-hour:—

"No. 5 Recipe.—Camphoræ, gr. xii.; Spiritus vini rectificati min. iv. In probe conterendo nixtis, adde, Calomelanos, gr. xij.; Opii, gr. ij.; Capsici, gr. iij.; Confectionis aromaticæ, gr. v.; Mucilaginis gumani acaciæ, q. s. Fiat massa et divide in pilulas duodecim.

"Signa. No. 5.—Stimulant pills. One pill to be taken every half-hour."

CONTINUING OUR notes upon the varieties of the garden Pea, we come next to the

PARADISE PEA.

This is a novelty of last year's introduction, which fully maintains the high character with which it was brought out. It is, as yet, very little known, having appeared at a time when the public were somewhat awakened to the necessity of caution with which new varieties ought to be received. As regards this, however, there need not be the slightest misgiving, as I have found it to be one of those which must ultimately become one of the standard sorts if preserved in its present true character. As will be seen from the accompanying figure, the pod is of very large size, remarkably well filled with a deliciously-flavoured Marrow Pea, and is fit to be gathered as soon, or at most within a day of the *Ringwood Marrow*. With such properties, therefore, every one will allow it is a variety well worthy of general cultivation.

The plant is of a strong and vigorous habit of growth, with a stem from five to six feet high, which is branching towards the top. The pods are generally single, but frequently in pairs, about four inches long, nearly three-quarters-of-an-inch wide, remarkably well and closely filled with from seven to nine large Peas, and when they begin to

ripen, they are thick-backed, succulent, and fleshy. The ripe seed is white, round, and smooth.

It was sown on the 5th of April, and came into bloom on the 15th of June; on the 20th the blooms fell and the slats appeared, and on the 11th of July the pods were quite filled and fit to be gathered. From this it will be seen that it does its work very quickly, at least much more so than some others, for although it came into bloom five days later than the *Ringwood*, it was not, even at the utmost, more than two days behind it in podding. It is far superior to *Shilling's Grotto*, being longer in the pod, better and more equally filled, and comes in much earlier. The *Paradise Pea* was introduced by Messrs. Steward and Mein, of Kelso, N. B.

R. H.

(To be continued.)

A LESS suitable period for a Poultry Show than the middle of *April* could hardly be suggested, since a large majority of hens will be at that time occupied either with their young chickens or in the work of incubation. Even with respect to the non-sitting breeds, eggs are then so valuable for hatching that the owners of good specimens of this class will surely be loath then to send them on their travels. With much surprise, therefore, we learn the determination of the *Newcastle, Northumberland, and Durham Society*, to hold their next exhibition on the 19th and 20th of that month. But it is not merely with regard to the time proposed for this meeting that we must express our dissent, for the prize-list, also, is so arranged that little encouragement is there held forth for the exhibition of some of the most valuable of our fowls.

A summary of the amount of premiums to be awarded to the different breeds will best explain our meaning.

	£	s.	d.
Shanghaes or Cochins	10	2	6
Hamburgs	9	15	0
Polish	7	2	6
Dorkings	4	17	6 !!!
Bantams	3	15	0
Spanish	3	7	6 !!!
Game Fowls	2	5	0
Malay	1	10	0

Any Society offering its prizes for the avowed purpose of improving of domestic poultry will justly be required to regard their economical value as one of the most important properties, and, therefore, such fowls as rather come under the head of "*birds of feather*," must necessarily occupy a place of secondary importance. We cannot, then, see the propriety of devoting £16 17s. 6d. to Hamburgs and Polish, while Spanish and Dorkings have between them only £8 5s.; Spanish, moreover, are even placed below Bantams, to which £3 15s. is allotted, the amount for Spanish being £3 7s. 6d.

Every distinct variety of the different families should, if possible, have a separate position on the prize list, but the aggregate amount of each family should bear a proper relation to their acknowledged value. This



principle, we think, is incumbent on any Society that proposes as its object the general improvement of our poultry-yards, although, where Bantams, Polish, and Hamburgs are specially acknowledged as the main objects of attention and regard, no one would have a right to complain of such a distribution as we have now alluded to.

Besides the class for "*any other distinct breed named*," we find one (No. 38), for "*the best and second best cock and four hens of any of the above breeds*," involving the difficult, and, under every condition, the unsatisfactory, task of the judges being called upon to decide between fowls of totally distinct form, feather, and properties; and this in addition to the unprecedented number of hens required at a season the most unlikely to have them in readiness for their appearance.

But *Geese*, as they stand on this prize list, claim a word at our hands, since £1 2s. 6d. is all that the Newcastle Society is disposed to offer for the encouragement of this most useful and valuable bird, while Ducks have £5 5s. between them.

Ganders only, we observe, are invited, and this, doubtless, on account of the duties in which their spouses will be then engaged; but by parity of reasoning, we might expect to find cocks, drakes, and male Turkeys, as the only representatives of their different races.

Class 47 is for "*extra stock*," but it is not stated whether fowls are here admissible, or whether Pheasants and other birds are thus designated. The former, we think, should always be limited to their regular classes, especially where a provision is made by "*any other*" class for their proper representation.

The Cottager "who exhibits the best lot in any of the above classes," has three prizes for his encouragement, but "*no entrance is required for this class*!" The meaning, probably, is, that no entrance fee is to be paid; but surely, it would be difficult to refuse admission on the morning of the show to any such persons bringing their baskets without any previous notice or entry, for the rule would fairly bear that interpretation, and how would the Secretaries be prepared with accommodation for an indefinite number of pens?

In *Pigeons* we have a most arbitrary selection. Runts, in their different varieties, a most valuable bird even for domestic purposes, while their estimation, in some instances, stands so high with the most critical fanciers, are unnoticed. The Bearded, Bald-pate, and self-coloured Tumblers the same. And although Nuns, Turbits, Pouters, Jacobins, and other fancy birds, are admitted, Owls and Archangels are summarily banished. The class for "*any other variety of Pigeons*," lately productive of many beautiful specimens, is not in this list to be found.

How are the best eggs to be determined on? Is size alone to carry the day, or are the judges to test their quality at breakfast? at which time the merits of the "*butter*," (of which the connexion with the objects of a "*Poultry*" Society is not quite apparent) will also, we presume, be submitted to their judgment.

These remarks, we need hardly observe, have no

origin in any desire to depreciate the efforts, or prejudice the success of the Society in question; but at this early season of the year, when numerous other prize-lists are in course of preparation, it is but just to our readers to call their attention to any such arrangements as may appear inconsistent with the judicious management of such Associations.

CAMELLIAS.

I AM not about to attempt a monograph of the Camellia, our space will not admit of it; although I must confess I have never seen the Camellia done justice to as yet in "gude black print," as the Scotch poet said. I wish merely to impress on the minds of cultivators a few important facts or features in its culture; and I am encouraged to do so, from having (people say) the finest bloom of these noble winter flowers that can be imagined at an early period; for my house has been in full blossom constantly since the beginning of December, and will continue so until the early part of April. A lady of distinction, who was here the other day, paid us a rich compliment about them. She said, "Mr. E., your Camellias are beyond beautiful!" and I do think she was right, for they are noble as well. I have paid much attention to their culture for many years, with a desire to ascertain how far appliances could be carried, in order to obtain the greatest profusion of flowers of the largest size with the thickest and darkest foliage; and I believe I can now scarcely push the effort any further.

These Camellias are all in pots, and are shifted, or repotted, about once in two or three years. On the repotting, which I never allow any one to do for me, I lay the utmost stress. I use, perhaps, more liquid-manure than most other cultivators, and I have long discovered that the man who thus practices must use composts and modes of potting *specially adapted* to that practice. Here lies one of the chief points in the general and systematic use of liquid-manures. My mode of draining the pots would, by many, be thought pushed to an unreasonable extreme; I do not find it so, but the reverse. About one-fourth of the depth of the pot, of whatever size, is occupied with drainage materials; but, be it observed, not entirely of non-absorbent or imperishable materials: one-half of these is turf.

As on the mode of preparing this turf in part depends the beneficial efforts sought to be produced, I may here state my practice. I procure what is termed strong or sound loam, as gardeners call it; that is to say, a loam slightly adhesive, such as gardeners love for fruit-trees—Melons, Pine Apples, &c. This, from an old pasture, which has lain for many years untouched by the plough, and on which there is a sward or turf, as thick and as closely woven as the best blanket, is the material, as far as loam is concerned, and the turfy portion for this drainage affair is pared about two inches thick, the rough grass, &c., being first mowed-off. This, then, is cut into small lumps of various sizes, from that of a walnut to that of a potato, and then charred, or rather steamed, by putting out the fire from a furnace, and introducing the lumps on an iron plate; at the same time stopping up the fire-hole and ashpit-doors, and throwing an old wet sack or mat on the chimney-top. This is concentration with a vengeance. If matters have been well carried out one cooking may do; if not, why, I give it a second ordeal; sometimes nursing some slumbering embers in the ash-hole to keep the game going. These lumps, when withdrawn, are almost singed, and possess such a pyroligneous scent as to be annoying to delicate nasal organs. In this state

they become very mellow, especially if they were as they should be—tolerably dry when introduced; and here they are well shook and squeezed in a riddle, or sieve, until at least half of the mere soil tumbles out. After this, they are, what I consider, a precious article, and applicable in other cases besides Camellias; but of this, more another day.

Now, before proceeding further, let me fairly assure the gardening world that I by no means suppose that this is the only good practice in Camellia culture. I utterly disclaim all such conceit; not out of fear of angry critics (who must live, as well as other folk), but because I neither can, would, nor ought to attempt, to repudiate the practice of other men of experience. There is, indeed, no monopoly in gardening knowledge. My object is simply to show forth my own practice. I well know, that the Belgian nurseryman, who propagates his tens of thousands, as a trade affair, will laugh at it. The fact is, that in growing Camellias as trees, and to attract the notice of good judges, and those high in station, and to propagate up to selling-point, with a keen commercial eye, are two matters so widely differing (albeit the subject be the same) as to call for differing practice. But I need say no more this way. Our exhibition-men can attest to the truth of these things. These turfy lumps, then, may be presumed to constitute half the drainage system; and I thus handle them in the case of good-sized shifts. Large and curved crooks are first so placed over the hole, and so overlapping each other, as that three good outlets at least are provided for the escape of water; a very few smaller crooks fall amongst these, but not entirely cover them; and now a layer of these turfy lumps is placed over, but not so closely but that what are termed pounded crooks may be strewn over, so as to fall into every crevice; thus dividing every two lumps of turf, but not covering them overhead; this done, the whole is pressed down close with a broad-ended stick, and now a layer of smaller lumps are strewed over: on the latter is placed the ball.

I have, in repotting, had, of course, annual opportunities of watching the "wear and tear" of this drainage, and I can assure our readers that I have found it nearly as fresh after two years as when first inserted; and that there is no doubt that it will work in the most efficient manner for half-a-score years or more, if requisite care be taken that no extraneous matter gets jammed in when they are set out-of-doors, and that the manure-water be nearly as clear as good ale.

As to the compost, it is chiefly composed of the same turfy material, but chopped tolerably fine by a sharp spade when in a dry or mellow state. Three-fourths of the loam, and one-fourth of chopped, sandy, turfy, heath soil, well blended, makes a capital compost of the most enduring character; for, be it understood, it is this power of *endurance*, or, in other words, of *retaining its organic texture a long while*, on which I take my stand as to growing noble Camellias; in this respect it will be seen that the gardener's object differs from the nurseryman, who merely wants to make a smart saleable plant in little time. If the loam is very sound, very fine sand may be added to ensure porosity, or even pounded charcoal, but the Camellia seems to feel quite at home in loamy organic matter if possessing enough sand to prevent what is termed souring in the soil.

In potting, I continue cramming in turfy lumps as opportunities occur, taking care to shake a finer compost amongst them, and in all cases to secure about a couple of inches of this finer compost over the lumps to finish with; the latter proceeding I consider necessary, as it serves to divide the water equally in its passage, and, indeed, renders the surface less susceptible of sudden atmospheric changes, and provides against sudden droughts.

Now, as to this liquid-manure which I think of first-rate importance for the production of fine blossoms with a dark shining foliage. For my part, I care little about nice blossoms, unless accompanied by that deep, rich, and glossy tint, for which the Camellia-leaf under first-rate culture is so famous. I have used various liquid-manures, both singly and in combination, but I think "Gibbs' Peruvian," is not only complete in itself, but the most effective. But it must be observed, that a little suffices, and indeed so it ought, for it is somewhat costly in these times. I water my Camellias myself at all times. I like not to trust any hobnail fellow with this matter, and I therefore know full well how little will suffice if almost constantly administered. I certainly do not weigh it out; I have no occasion in this matter. I can tell instantly by the frothing of the water in the water-pot how the quality stands. But I will venture to affirm that I do not use an ounce to a gallon. But I use it almost constantly, from the period when the blossom buds are three-parts grown, until they have nearly ceased to make their young wood, when I not only cease manurial-waters, but apply a very limited amount of ordinary water.

The guano is stirred up in a vessel for the purpose, and a little quick lime added; this soon clarifies it. It is, however, necessary to rack it off two or three times, and, if any difficulty arise in getting it clear, we simply add more water, and rack it off again; clear, however, it must be. I may here observe, in order to dispel any fallacious ideas that may arise as to the use of Guano water, that in its application to Camellias, in pots or tubs—I had almost said to pot plants in general—there can be no question that a *special mode of potting* must be resorted to. After all the clarifying we can practice, all liquid-manures have a tendency to clog the soil; that is to say, to prevent that free ingress of the atmosphere which is so necessary to the welfare of the roots, and to prevent that free percolation, or egress of moisture, which creates, as it were, a demand for atmospheric action; to say nothing of the ill effects on the very texture and organism of the fibres, produced by surplus moisture too long retained, and, by consequence, become stagnant and corrupt.

I may here observe, that I this day measured blossoms of the *Camellia Rossii* at least fifteen inches in circumference, and some of the *C. elegans*, about the same size. In spite of all the fine, new kinds, what a fine thing is *elegans*? A model for a first-rate Hollyhock. It is well named *elegans*, and the original raiser ought to be proud of it. *C. imbricata*, too, is still a fine thing; and as for *C. triumphans*, with its peach-coloured blossoms, what a bouncing affair! We have one called *Alcmene*, a fine peach-coloured thing, raised by the late Dean of Manchester; that talented gentleman, so often named by my friend Beaton, in connection with Bulbs and hybridisation; this is little known. We had it from Spofforth some years since, and it is very often a most beautiful and symmetrical thing.

R. ERRINGTON.

MEETING OF THE LONDON HORTICULTURAL SOCIETY.—21ST FEBRUARY, 1854.

In my account of the last meeting, I told our readers that there would be a grand sight seen here to-day—specimens and drawings of the Duke's Tree—*Welling-tonia gigantea*; and the Society announced another grand sight which would come off at the same time and place—specimens to show the "relative quality of Deodar and Cedar of Lebanon timber, by specimens from India and from Lebanon itself." All young gardeners and governesses ought to gather "specimens" of all plants which come in their way, in

flower, in order to learn and mind the names of them, and to be able to tell such names to the rising generations: not such *specimens*, however, as the Society had on view from India, as we shall see presently.

Whether it was from a desire to have a sight of even a dried branch and a picture of that gigantic tree which is to commemorate the great Duke, or to hear of the great national advantages of planting all the knolls in England, and all the hills in Wales, in Ireland, and in Scotland, with the Deodar, I cannot tell, but I think they could not have brought together a more high or more respectable company if they had advertised that the Emperor of Russia and Omar Pacha were to play a game at cribbage in the Egyptian Hall. I never saw such an in-door assemblage of horticulturals before. I was glad to see Mr. Appleby look so well, and so busy noting down from the Lecture on the merits of the Deodar, for his Essays on Forest-planting, no doubt; he also booked a new Orchid that was there, but he passed over an extreme novelty in the half-hardy bulb way, with a nod, as much as to say, "do not you wish you could tell the name of it?" and he turned to a collection of most beautiful Cyclamens, all crosses, and all of them all but quite new to gardens. One pot of a new Cyclamen had 254 blooms wide open, besides buds, and those that were going to seed.

Then, as to Fruits; Her Majesty sent such as nobody ever sent before to that room, two splendid Pine Apples of exactly the same size, the same looks, and the very same weight to the split of a hair, that is, a match pair, each weighing 6 lb. 4 oz.; and the two crowns could not weigh 4 oz. between them. It was remarked of them, that if they had been made in a mould they could not come out more alike; add to this, that they were the very best kind of Pine known to us—the *Smooth-leaved Cayenne*—and that the plants which produced them were only suckers this time last year, but chips of the old stools, no doubt, rather than ordinary suckers; yet who could do so much with the best *Black Jamaica*, or the second-best, or worst *Montserrat* Pines, seeing that *Enville's* and *Providence* Pines are out of date. After these, there were fine specimens of the best of all Black Grapes, the *Barbarossa*, and as fine dessert Pears as we ever had at this season, notwithstanding the bad season for all sorts of keeping fruit.

But let us begin with the Flowers to describe the whole in the order in which they stood on the tables. First of all, there was a large specimen of a new Orchid from Assam, sent by Mr. Veitch—this was a *Cypripedium*, in the way of the old plain-leaved one called *Insigne*, but as large again in the flowers, which are of a brighter colour; the habit of the plant is also much stronger; there were seven large flowers open on this plant and others coming. Mr. Jackson, of Kingston, sent another Orchid, as good as new, being the lovely *Barkeria elegans*, at last; the flowers are about the size of those of *Barkeria spectabilis*, or about those of *Dendrobium nobile*, a better-known plant; the colour of the sepals and petals deep lilac on the back, and lighter on the inside; all over something of that delicate tint which is seen in the lilacy portion of a *Dendrobium nobile*; the lip is large and French-white, with a broad blotch of intense purple about the middle of it; the column lies flat on this lip, advancing just to the margin of the blotch, and ending like the head of a fish—say a small pike, with two dark spots just where the eyes ought to be, and a third dark spot to represent the mouth. You could not look the flower in the front without imagining something of this sort; all the colour is like pure ivory, with these markings, and a little streaked with light purple along the back—of the little fish—altogether, it is an exquisite gem, worth, perhaps, about a guinea the inch. There was a small plant of *Barkeria Skinneri major*, also from Kingston. This I have seen in flower

since last November, and, as I said before, they find no sort of difficulty in growing and flowering these tiny Orchids, but they keep them much cooler than most growers, and they grow on nothing so well as on bare chips of wood quite close to the glass, on a north aspect; it would pinch one's fingers to hold them so near the glass this cold winter, yet a score or more of these *Barkerias* were in bloom there all the time; but the great demand for them has thinned the roof sadly.

The same firm sent an African bulb, which they bought as a new plant, but by some mistake it turns out to be what I believe is *Veltheimia viridifolia*, and which comes very near *Eucomis punctata*. I have grown the two in a front border, and found them nearly hardy; at least, I could always keep them with coal-ashes and an empty pot turned over the bulbs in winter.

Some of our readers may recollect about the new seedlings of *Cyclamens*, which I described at one of these meetings this time two years; the plants have never been touched since, and now it is hardly possible to conceive how pretty two specimen pots of them looked to-day, at this meeting, just such things as a Duchess would like to see on her work table, where they would be just at home and in keeping with all around. One pot had 254 flowers open in a diameter of twelve inches, and every one of them stood upright on a rigid stalk, and there was not the eighth-of-an-inch of difference in the height of all that mass of bloom, so that a house-fly might walk all round on the top of them, stepping from flower to flower, without ever using his wings at all. The tops of the flowers could hardly be five inches from the rim of the pot, and the leaves are numerous, but small accordingly. The colour is a delicate French-white, getting a little deeper at the eye; then, it stands as clear as anything that this is an entirely new Cyclamen; and so it is, and a real cross, too, between *colum* or *vernum* and *persicum*, and the name is *Atkinsonii*, after Mr. James Atkinson, of Painswick, near Gloucester, who made the cross, and got this, and many other fine varieties of the same family, some of which, if not all, are now on sale in London. But I must describe how Mr. Atkinson managed his plants, for I was lucky enough to get introduced to him, and once the ice is broken, there is no more ceremony about flowers and their possessors from her Majesty downwards.

First of all, Mr. Atkinson is a *practical* amateur, who has retired from the busy scene and enjoys himself—as all practical men ought to do as soon as they are able—in his own way. He has travelled abroad, and seen how the Cyclamens do in a state of Nature; and he told me that he often found them growing most luxuriantly among broken limestone and other rock fragments, where all the earth they could reach was from decayed leaves, drifted in among the stones from the neighbouring forests on the Swiss and Italian Alps; that these accumulations of rotten leaves formed a kind of cement, to fill up the fissures among the stones and broken rocks; that the bulbs, so to call them, might appear, in the hot season, to be roasting among the hot stones; but, that from the nature of the situations, the dead leaves and stones among which the roots penetrated, the latter were never dry, winter or summer; and, moreover, that in the wettest season, no more water could lodge among these roots than if they were hung up in a sieve. His practical eye saw at once how all this could be imitated at home, so far as to improve on Nature in the wilderness. He had pots made on purpose for them. These are eight inches deep, twelve inches across the top, and eight inches across the bottom. The first two inches of the bottom he filled with small pieces of soft stones, with a few clean leaves mixed among the stones; then, nearly three inches of light, rich compost of rotten leaves and good loam; then, four bulbs, at equal distances, in each pot; and,

last of all, the spaces between the bulbs are filled up with the same compost, the tops of the bulbs being just covered and no more. Perhaps it will be ten years before they want anything more doing to them, except a fresh surface, now and then, for the look's sake. He keeps them in a cool frame; and last December, the two pots he showed to-day were so hard with frost, that he could not break the surface with his finger; but they received no hurt.

Each pot, when exhibited, was plunged in a fancy willow basket, made to suit, and with two handles; the whole surface of the baskets and pots were covered with green moss, the leaves and flowers coming through as from a sward, a nice hint for how to place such plants on a lady's fancy table, or anywhere through the rooms, but for the wicker basket use glass or china vases *made to suit the pots*, not as one-half of the great folks do now-a-days, first buy their ornamental vases of all earthly and unearthly shapes, and then tease out the gardener's life about getting pots to suit their most foolish whimsies, just as half-crazy people shape their flower-beds first, and then think about the kinds of flowers, or as we in the country sometimes do, put the cart before the horse.

Mr. Henderson, of the Wellington Road, sent a collection of seedling *Cyclamens*, consisting of thirteen pots, and every one of the varieties seemed to me to be really good, new flowers; besides the varieties, there were the old *Persicum*, and the sweet-scented *Persicum*, sent probably as a ground for comparison. The whitest of the seedlings is called *Persicum album*, a very large flower, pure white all over. *Pallidum*, the next whitest, is nearly white, with a pale purple eye. A very singular one is doubled in the *divisions* of the flower, there being seven divisions in each flower. Another, called *Striatum*, has a white ground and purple eye, like *Persicum*, and streaked all over with lines and blotches, like the markings on the new white Japan Lilies. The next is *Carneum*, a large flower with a blush flesh-colour all over, and a deep purple eye. After that shade comes a deep rose-coloured one called *Roseum*; and deepest of all is *Rubrum*, a large, deep blood-coloured flower, particularly rich. I think there was one, if not two, of the dwarf French-white *Atkinsonii* among them. The ladies so crowded round this beautiful group after the meeting that I could not catch all the names, but I am quite sure of all I have named.

Besides these, there was a pretty good specimen of the old *Cyclamen persicum* in a 32-pot, with sixty flowers open on it, and the bulb was entirely out of the soil, and the top of it was higher than the rim of the pot. I am not quite certain that I am right in believing that all *Cyclamens* ought to have a bulb just covered in the soil, but I think they ought, and this specimen plant did not alter my old opinion. The reason for keeping up such bulbs, and all true bulbs above the soil, is to make more room for the roots, but what is gained one way for the roots is more than lost by the exposure of the bulbs. This I have always maintained, and Mr. Atkinson's pots came in to confirm my preference.

Thysacanthus rutilans was here again from the garden of the Society, the same plant that was at the last meeting, and in still better feather. It is a valuable thing for country gardeners. They also sent two of Fortune's *Azaleas* from China, *squamata*, a deep peach-blossomed kind, which, like the Peach, flowers before the young growth begins, a very useful tint, shape and habit to break a new strain in the old Chinese kinds, which run so much into one strain. I read of this plant as of no great account, but I never saw it in bloom till now, and I must say that some writers have too many eyes, or no eyes at all. There is a true foundation for a distinct race of garden crosses; a far better pollen parent than either *Mirabilis*, *Exquisita*, or *Optima*, and yet it

must be passed over because it wants the trouble or pleasure of the cross-breeder.

Azalea obtusa, another of the new ones sent home by Mr. Fortune, with a small crimson flower, will please many sooner than *squamata*; but it is of much less value, as we cannot effect much improvement by it, either as father or mother.

We import silk and cotton, Saxony and Spanish wools, in woolly bales of no inviting aspects; but see what beautiful dresses we get out of them! and it is just the same with wild flowers—so much raw material; we only want the manufacturers to make what kind of flowers we want, and, happily, they are becoming more numerous every season.

There were also nice plants of *Begonia manicata*, and a cross seedling from it, from the garden of the Society, together with *Epacris osnoimiflora*, *Polygala Dalmatiana*, *Acacia lineata*, *Centradenia rosea* and *floribunda*; the latter much the best; *Echeveria retusa*, *Correa Goodii*, and a few others of those useful late winter-flowering, or early spring-flowering plants, which deserve a place in every collection, for the time of their flowering is when flowers are scarce.

Who would think that a Crocus in a pot could make a sensation in the heart of London? But so it was, and that, too, among ladies from the country, come up for the "season." I could not get near it for a long time. It is called *Sir Walter Scott*, and is the largest Crocus you ever saw or heard of—a pure white ground, and full of light violet bands all over. A bed of it would beat a bed of Tulips, if they could be seen at the same time. From the name, I should take this Crocus to be a garden seedling; but, as this Society does not pretend to be florists, they must have had it from some one in that line; and, let alone their giving prizes to aspiring florists, it is a good sign to see them sending florists' flowers of the first class from *our own* garden. Patience does wonders everywhere—patience turned the very Austrians to join with the "maritime powers" in a just cause. I only wish I had sufficient patience to be a florist, and I would join the best of them, hand and glove, to bring about what I can see, even on the surface of things.

Wellingtonia Gigantea.—As was promised at the last meeting, there were drawings of this splendid tree, exhibited by Mr. Veitch, as well as dried specimens of the branches from young and old trees, with fruit cones, a piece of the bark, and a sample of the wood, all of which were gazed on with wonder after the lecture on it was over. Just think of a tree 29 feet in diameter, and multiply that by three to find the circumference, as we used to say at school, and you would all wonder. The drawing of this tree in the "Illustrated London News," and even the one here to-day does not give one any idea of the beauty of the *form of growth*. It is from the dried specimens of the branches only that any of us can form an idea of this vegetable wonder. I fingered these specimens over and over, and the nearest idea I can give of it, is to say, that the leafy growth on branches of old trees is very near that growth in *Cupressus flacida*, and on the young wood, more like the growth or leaves on *Cupressus filiformis*, that is, with sharp prickles to the minute leaves in the young growth, and that style of foliage on an old plant of *Cryptomeria japonica*.

Deodar.—It was, probably, from the announcement respecting the Deodar that so many of the country gentlemen assembled at this meeting. Our own Editor has shown lately that this was the Cedar with which Solomon built the Temple at Jerusalem; and those who understand the differences of different woods, who had seen the Deodar in Indian temples, bridges, and all sorts of buildings, have told us, long since, that there is no wood so good and durable as that of the Deodar; but

some great people would not believe this, and threw dust in the eyes of those who did. But if seeing is believing, any respectable person may now see what kind of wood this Indian Cedar is, by calling at the rooms of the Society in Regent Street. We had a plank of it in the room, cut from a young tree in India, it was eighteen feet long, four feet six inches wide, and four inches thick, without a knot, and hardly any sap wood; it smells delightfully when they burn it, and even when it is worked by the carpenters it perfumes the whole place. We had a series of Indian drawings showing the range of the Himalayas, the Deodar forests, with temples and all sorts of buildings made of this wood in the foreground. Those who did not know it before, or who did not learn it from Dr. Royle's illustrations of the botany of this range, may be told, that the climate where the Deodar grows to the greatest perfection is very much like the climate of the Morven range, in Argyleshire, in the west of Scotland, only that the warm season begins two months earlier on the Indian range; but as to wet and dry, cold and dreary, snow, sleet, rain, and hail, thunder, lightning, and all, there is no difference between the Scotch hills and Indian mountains, only that the thunder is louder in India, so that wherever the Larch will grow and thrive, the Deodar will do the same, and is a much faster timber-making tree, and the wood is superior in every respect to that of Larch; but Mr. Appleby has booked all that part of the subject, and we must wait his turn.

D. BEATON.

GOSSIP ABOUT VARIOUS MATTERS.

DRYING-UP THE FOLIAGE OF PLANTS.

"I HAD a few nice plants, Geraniums, best kinds; Cinerarias, ditto; a few Epacrises, Chorazemas, &c., and being anxious to grow them well, I spared no pains on them. In the late frosty weather the temperature ranged at night from 45° to 55°, and during sunny days I gave air as freely as kept down the house to not more than 5° higher. In fact, I do not see how you could have managed them better, and yet I am so annoyed, the hard-wooded plants look sickly and as if they were scorched with the hot air of a furnace, and many of the best and youngest leaves of the Geraniums have been scalded, as if the steam of a boiling tea-kettle had passed over them. I watered from a cistern in the house; and to my surprise, though some authorities said, "Water once or twice a-week," I found my plants dry every morning. I think there is some *little* thing wrong; do explain what it is; and then I shall not mind my present disappointments."

Most willingly. No doubt, you tried to do well, and there is always hope in the men or women who "will not give up." Bruce learned perseverance from a spider forming its web. Mungo Park gained self-reliance, and a firmer trust in Providence, by the sight of the tiny green moss in the desert. Life is an aggregate of *Littles*; not the great striking episodes of existence, but these next-to-imperceptible *Littles* alike form and demonstrate human character. The keener the observation, the more will this truth be apparent. Look at that boy! Mark with what new fledged zeal he attends these pretty window plants, watering the roots, sponging the foliage, giving them air and sunshine according to their needs. But a fresh attraction presents itself; the plants are comparatively forgotten; they meet, unprotected, the mercies of a frosty night; the wreck is huddled into a corner; gardening is abjured for an age, as other once favourite pursuits have been; and if you follow that youth into the world, you will find, that unless influenced by other minds, he will be a thing of

fits and starts for life. But glance over the way, at that lad, the owner and regulator of that sweet window balcony, that passers-by pay homage to as a gem of taste and beauty. He could tell you of the tricks of Mr. Frost; of disappointments he has known; of failures he has experienced; of bright hopes of bloom and flowers, not merely *deferred*, but scathed and blasted; but, instead of souring his mind into a sort of contemptuous passiveness, they whetted his spirit to increased intelligent effort and persevering exertion. "The boy will be father to the man." He may never be distinguished for wealth; his name may never be whispered amid the exclusive castleships of society; for, even in a golden age, he may place no absorbing value on either; but, unless greatly changed by deteriorating influences, men will place the fullest reliance in his indomitable spirit and unswerving perseverance. No stick-in-the mud will he be. No mole-hill difficulties will ever swell out into impassable mountain barriers with him.

Two *little* things would help to produce the result complained about. General rules are excellent things in their way; but they are chiefly valuable when an intelligent judgment brings them to bear on varied circumstances. The temperature referred to was quite proper for a *warm* greenhouse, and with an outside temperature ranging from 30° to 40°, no harm would have resulted from an average temperature of 50°. Even the plants would not have suffered much at that temperature in a sharpish frost, if by covering the house you so far checked the radiation of heat, and the evaporation and the loss of moisture. But as you do not speak of any protection, and whether you use flues or pipes, do not say anything of evaporating pans upon them, I can easily imagine why you found it necessary to resort to the water-pail often, with an inside temperature of 55°, and an outside temperature of from 20° to 10°. By an inordinate use of fuel, you not only dried the moisture out of the soil of the pots, but dried the air in the house, which thus sucked moisture out of the stems and foliage, and then that air—lighter from heat, and lighter from holding moisture as vapour—ascended to the roof, where the moisture was either condensed into ice, or trickled down the sash-bar, or the air thus moistened found its way out by the laps, and other air, cold and dry, found entrance. This process alone, kept up for any length of time, would not only demand frequent waterings and syringings, but, even with these would exercise a debilitating influence on the constitution of the plants.

But this would be greatly increased when the second *little* error in the circumstances was committed, (and committed very frequently by those who should know and practice better), namely, giving so much air after such a cold night, merely because the sun shone bright, though it might be freezing sharp all the time in the shade. You thus introduce a cold air, parched enough to chap and roughen your own hands and cheeks, among your nice plants that were receiving a moderate roasting the previous night. But what is to be done? The health of the plants, economy in labour, and economy as respects the fuel heap, point to one practice. Those who read what has been said about protection will see one remedy. Failing that, the plants, in severe weather, would be more comfortable for short periods at 38° than at 48°, let alone 58°. Even at that temperature some evaporating pans on the heating medium would be useful when there was an average of from 20° and onwards between the internal and external atmosphere. At this temperature there will be little drain on the juices of the plant. Besides, at this comparatively low temperature at night, the plants will stand an amount of sun heat without much or any air, which they could not do if the heating medium was hot. The less air admitted during such dry, frosty weather the better,

unless care is taken to have it heated and moistened before coming in contact with tender plants. Very little fire should, therefore, be put on such houses in a morning until you satisfy yourself that there is no likelihood of the sun shining; ever keeping in view, that the sun-heat is the best as well as the cheapest. With cool pipes or flues, little air would be required in very cold, frosty weather during the two last and the two first months of the year. If the sun should come strong, when, unawares, the pipes or flues are hot, instead of letting in great blasts of air, it is much preferable to draw the fires out. Syringe the house, paths, &c., and, if necessary, shade the house, or even throw water over it with the syringe. If the sun is likely to continue, the water may be slightly tinged with whiting. *The worst* of the latter plan would be, that as dull weather might soon succeed, the house would be darkened, and would require a little labour, or a good shower to clear it all away. With a night temperature of 40°, or, if higher, with means secured for giving moisture to the air, otherwise than from the soil and stems of the plants, the house may rise from twenty to twenty-five degrees from sun-heat, for a few hours, and the plants, in a keen, frosty air, would be better without opening the sashes than with it. But, if that must be done, and there is no way of ameliorating the air before admitting it, give but a small quantity at the highest part of the roof; and though there the air that escapes will be the moistest as well as the hottest, the air admitted will also be somewhat moistened and heated before reaching the plants, and all such scalding and burning will be avoided. Much of all the anxiety will be guarded against, so far as all greenhouses are concerned, by never allowing a strong fire-heat and a powerful sun-heat to act together. When seeing plants exposed to great and sudden extremes, and knowing the consequences that are sure to result, though some manifest it sooner than others, I have thought a good lesson would be given if the perpetrators were snatched out of their warm bed some keen night, and kept in the open air for an hour without the luxury of clothing.

PRUNING AND POTTING EPACRISES.

"I have some nice plants (*impressa*), that have just finished blooming. Should I prune off the long shoots now, or wait until I pot them? I have nothing but a greenhouse. My Epacrises are not looking healthy. The flowers have opened moderately. I think the soil is in bad order. I could give the plants a little heat in a pit. Shall I prune and fresh pot, and get them to grow freely?" The answer to both must be based on the same principle—never to give a check to roots and branches at once, if it can be avoided. Recollect, there is a constant reciprocal action going on, and, therefore, when a check or mutilation takes place in one part, there will be an effort made by the other part to replace or repair the injury. Here are two Thorn plants; you take up one, prune it down, and plant it again; the other you leave in the ground, after pruning it back in a similar manner. Have you any doubt which of these would grow the most vigorously the first season? Here are two nice Geraniums, in August or September, that must be cut in and repotted for the following year. Cut down one, and repot, by partly disrooting, and thus give the whole plant a sudden check: prune in the other; leave the strength in stems and roots full opportunity to exert itself in forming new branches; and when these are about an inch in length, shake the old soil from the roots, prune them a little, if necessary, and bring these healthy young shoots to react, in turn, upon the forming of fresh and vigorous roots. Will the result ever leave you in doubt which system to adopt in future? Just so with these Epacrises. In a greenhouse, the month of March or April will be soon enough to prune the

young shoots freely back to within a bud or two of whence they come. Then they should be kept in the warmest and closest place; and when the young shoots are growing away freely, and when from an inch and onwards in length, then is the time to repot them, merely picking out a little of the most exhausted soil, and doing as little injury to the roots as possible; keeping the plants a little shaded for some time afterwards, giving them what incentives to growth you can afterwards—for the plant possesses a high temperature and a clear sun in Australia—and taking care to have the wood well ripened in September and October.

The last inquiry I would give much the same answer to. Even although the soil was a little sodden, and a worm had got into it, I would prefer getting the slimy fellow out, by sending a small bit of wire through the ball, and rearranging the drainage, and then cutting down, and having fresh shoots started before repotting. If, however, the soil was in a very bad state indeed, I would repot at once, very likely in a smaller, clean pot; but then I would do little to the top until the roots were working freely in the fresh soil, and then the pruning back would be effected. During the whole of this process, a little shade, and an increase of temperature, would be desirable. By this latter simple mode many a very sickly plant has been restored. By potting and pruning at once many such plant has at once gone to its final resting place. During the summer, whilst growing, the whole tribe likes heat and moisture. Hence, when there is no other house—such as a vinery, peachery, or even the cool end of a pine-stove—a cold pit, kept warm and moist after May, by giving, comparatively, a small supply of air, will suit them better than a greenhouse. Wherever grown they must be fully exposed to sun, and be saved from drenching rains in September, and be housed in October. Need I add, that fibry peat should form the constituent of the soil, with an addition of silver sand, broken pots, and charcoal, to keep it open.

LARGE GERANIUM PLANTS DYING.

"What can be the reason?" I cannot say, except it be the common result of all organised existence that do, or are made to live *fast*. I, myself, sent some queries respecting such misfortunes, but no answer came. My impression, then, is, that when we grow large specimens, in a short time they as prematurely decay. I found this to be the case when coaxing extra rapid growth by adopting the *one* or *large* shift system: I have lost some large Geraniums for several years. Several Fancies went at the collar, with heads from three to four-and-a-half-feet in diameter, and they could not have been more than four years old from the cutting. The Fancies seem more liable to this than the more succulent kinds. We must just be content, I suppose, with smaller and younger plants.

LOSING PLANTS.

"Do you never lose any plants that you have resolved upon keeping? We should not feel so disheartened by our losses, did we know that you and your coadjutors experienced at times a similar misfortune?" Well, be encouraged, by all means. I, even if I did not venture to say *we*, could give you many a chapter on failures. The fact is, that there are few advices I could tender but have been dunned into my own brain by a fair spice of disappointment, from which I would willingly relieve you. Even this last winter I have not been free from them, especially in two instances. The first had reference to *Calceolaria amplexicaulis*, a favourite of mine, because of its soft lemon colour, and a free bloomer when rightly treated. I lately described how my Calceolarias stood on a north border, uncovered for ever so many weeks, but none suffered except this *amplexicaulis*, and of that I have not got one healthy

plant, and fear I must abjure it for a season. I knew very well it was tender, but did not know that it was so much more tender than others, most of which never looked better. My second misfortune was with a lot of beautiful plants of *Humea elegans*, that stood in a cold pit well protected. Everything else escaped, but they were destroyed. This mishap was worse than the other, as I had a place for every one of them, and the whole course of planting must be changed for the want of them. I had previously kept them in cold pits, but the plants had been better hardened-off, less luxuriant than they were this season, and the frost had been less continuous and severe. Now, this will teach me the importance of getting such plants, if possible, in another year, by the middle of November, into some receptacle where they can be kept airy and cool, and have a little fire-heat in severe weather. This is just what I intended doing this winter, but the frost came so severe and sudden that I thought moving the plants would be more injurious than allowing them to remain well-covered where they were. This double loss may be a warning to others, and, therefore, worth mentioning.

R. FISH.

THE ANTIRRHINUM.

(Continued from page 424.)

Propagation: by Cuttings.—In last week's COTTAGE GARDENER I gave pretty full directions how to raise new and improved varieties of this charming flower. As a matter of course, whoever either raises a superior variety from seed, or purchases from a florist either new or established good varieties, is naturally anxious to increase such. They may, to a limited extent, be increased by division, but that mode is slow and uncertain; whereas, cuttings strike so easily that the grower need not resort to any other method than that by cuttings.

There are two ways by which cuttings may be rooted; first, in pots, placed in heat; and second, under a hand-light in a shady border. The first may be resorted to where the proprietor has the convenience of a hotbed with a frame set on it, or a regular propagating house. With either of these conveniences the way to proceed is as follows:—

Prepare a cutting-pot (four or five-inch diameter) by well draining it, that is, place a large crock, or an oyster-shell over the hole at the bottom of the pot, then place a few lesser potsberds over that, and upon them at least an inch of still smaller, covering the whole with a thin layer of moss to prevent the soil from choking up the drainage; the whole to occupy fully one-half of the depth of the pot. Upon this good drain place as much roughly-sifted light compost, formed with equal portions of loam, leaf-mould, and sandy-peat, as will fill the pot to within half-an-inch of the rim, give it a gentle shake down, but do not press it hard; then fill up the remaining space level with the rim, with rather moist, fine white sand, stroking it off level with a straight edged stick; then proceed to choose the cuttings. The best are the short side-shoots produced below the spike of flowers, or weak shoots growing from the sides of the plants. Avoid strong, coarse shoots, these are apt to damp off on account of holding so much sap. Prepare the cuttings by dressing off all the lower leaves, leaving only three or four if they are small, then give a clear horizontal cut at the joint. It is advisable always to make the cuttings very short; indeed, this remark applies to all cuttings of soft-wooded plants. I, this spring, lost the greater part of a crop of *Verbena* cuttings, by my man putting them in too long, with a piece of old wood at the bottom of each. The few that struck made roots from the upper part of the cutting. Let my mishap be a warning to the propagator. There

is nothing gained by large cuttings, for if they do strike they are much longer in doing their work. If cuttings are plentiful, then fill a pot with one kind only, placing the label in the centre, and the cuttings close round the side of the pot, just allowing room enough for the leaves of each cutting to have elbow room. As a general rule, I have found for such small cuttings half-an-inch between each is ample space. My good friend, Mr. Beaton, in his excellent paper on striking cuttings, mentions that he accidentally found out that cuttings do better if put in before the sand is wetted. I agree with him on that point, having practised it for some time, that is, for soft-wooded plants only. Such things as *Heaths* and *Epacris* require the sand made fine, by watering, before inserting the cuttings of such hard-wooded plants.

To return to the *Antirrhinum* cuttings. When cuttings are scarce, and not sufficient to fill the pot, then insert a label between the varieties, so as to distinguish them at the time of potting them off. Proceed till all intended to be propagated are put in, and then give them a good watering, and as soon as the leaves are dry place them in the frame, or in the propagating-house. Shade diligently and effectually from the sun, and keep the sand moderately moist. They will soon bear the sun's rays for an hour or two in the morning and afternoon, and with this care and attention every cutting ought to be rooted in a fortnight or three weeks. The season for putting in these cuttings may be extended from April to August, but the best time is about the middle of July, because then the plants will give a good supply of cuttings, and they will have time to get well established before the winter.

Immediately they have emitted roots they should be potted off singly into three-inch pots, in the same compost. Nip off the tops as soon as they are potted, to cause them to make bushy plants. Place them, when potted, in a cold frame, shading them from the sun till fresh roots are made; then give air moderately at first, and more freely as they can bear it; they will then be ready to plant out in the blooming-bed, or, if very much valued, they may be kept in the pots in a cold pit till spring. The method of striking them under hand-lights is simple and easy:—Prepare the border for them (behind a low north wall) in the same manner as described for the pots, with the exception of the drainage, unless the border is wet, then it will be advisable to drain it also. Raise the border two or three inches above the ordinary level; make the sand smooth, and place the hand-lights upon it, to make a mark to show where the cuttings are to be planted; make the cuttings exactly in the same way as described above for those in pot; then, with a small stick, insert the cuttings in rows, within the space marked by the edges of the hand-light, and when all are planted, give a gentle watering, leaving the hand-lights off till the leaves are dry; then place them over the cuttings, and they will need no more care till evident signs of growth take place, when the hand-lights should be lifted off for two or three hours every morning, and, finally, remove them altogether, when the cuttings no longer flag with the exposure. In a month's time they may be transplanted carefully where they are to flower. This hand-light method should be put in operation as soon as ever sufficient cuttings can be obtained, because they do not root so quickly, though surely, as those in pots in heat.

T. APPELEY.

(To be continued.)

STOVE FERNS.

(Continued from page 404.)

GENIOPHLEBIUM SEPULTUM (Covered).—A very remarkable South American Fern, of great beauty, and very rare. The fronds are lance-shaped and pinnate,

and, when well grown, a foot or more in length. This deserves its designation of a very remarkable Fern, from the fact that the pinnæ, or leaves, are covered thickly with narrow, fringed scales, of a light, hoary colour. These feathery scales give the plant a very distinct and beautiful appearance, so much so that I, or anybody else, may distinguish it amongst a numerous collection many yards off. I fortunately possess two plants of it, and I find it will bear a lower temperature than most other Stove Ferns. The *Adiantum macrophyllum* was quite killed in the same house in which this same *Goniophlebium* is quite healthy and uninjured. This is a remarkable fact, that some plants from hot regions bear more cold than others. I remember the day when the hardy *Aucuba*, because it came from Japan, was thought to require the protection of the greenhouse, and now it is found, in suitable soil, to be harder than our common Laurel; and so, I have no doubt, many Ferns from warm climates have a constitution more hardy than we are aware of. This Fern I have increased, though slowly, by dividing the white slow-creeping root-stock.

GONIOPTERIS.

This is a well-defined genus, formed out of *Polypodium*, by Mr. Prest. The name alludes to the lesser veins running in angles, (*gonia*) and *pteris*, a Fern, or, in simple English, the Angular Fern. The species of this genus are not numerous, and grow only to a medium size, never exceeding three feet, and generally not more than one foot in height. The most interesting are

GONIOPTERIS FRAXINIFOLIA (Ash-leaved).—A Brazilian Fern, with fronds two feet long; they are pinnate, and the pinnæ (wings, or side leaves) are smooth, shining, and of a dark green. Many of these pinnæ form little buds at the end, which, in a damp stove, soon put out roots; and, if these are carefully cut off and planted shallow in a pot, under a bell-glass, they soon make good plants.

G. PENNIGERA (Feathered).—Though this elegant Fern is a native of New Zealand, it requires the stove to grow it to its greatest beauty. The fronds are of two kinds, barren and fertile; the barren fronds grow one-and-a-half feet long, are spread open, are pinnate, and the pinnæ are covered thinly with short hairs, and are of a long, narrow shape, like feathers; the fertile fronds are curled up, and grow more erect than the others. The seed vessels are placed in the middle, between the main rib, on the angle of the smaller veins. Increased by dividing the creeping rhizoma. A very beautiful medium-sized Fern, worthy of general cultivation.

GYMNOGRAMMA.

This genus has some of the most interesting and most beautiful Ferns in cultivation, containing the elegant Gold and Silver Ferns. The name is derived from *gymnos*, naked, and *gramma*, writing, because the seed-vessels have no cover. With a moderate magnifier, the seeds may be seen in the cases without any covering. All growers of Ferns ought to have a tolerable good microscope to observe their wonderful conformation. Without such an instrument the greatest beauties of tribe are lost to the naked unassisted eye.

GYMNOGRAMMA CHRYSOPHYLLA (Golden-leaved).—Emphatically said to be "one of the most beautiful exotics in cultivation." Grows plentifully in the West Indies and South America, on stumps of trees and in crevices of shaded rocks. The fronds seldom exceed a foot in height, excepting under high cultivation, in a moist, high temperature. They are bi-pinnate, or twice divided, and the pinnæ are of an oval shape, slightly cut at the edges. The great beauty of this Fern consists in the under-side being covered with a bright, golden-coloured powder. Many a time have I been delighted, on showing this Fern to visitors who had never seen it before, with the

glowing pleasure depicted on their countenances on seeing the bright yellow colour on the under side of the leaves. The upper surface being the usual colour, green, had nothing remarkable about it, but, on turning the plant upside-down, the glorious golden-yellow always drew forth exclamations of wonder and delight. Its culture is easy; the only point that must not be neglected is water. This element must be regularly supplied. It seeds freely, and, in favourable circumstances, the seed vegetates as freely. These circumstances are, a constantly moist atmosphere, with a high temperature. I have had them come up, as it were, spontaneously, in the shady parts of the Orchid-house; but the more sure way is to scatter the seeds on some sand-stones, laid on a bed of moss, kept moist, and covered with a hand-light, or large bell-glass. The second seed-leaves of great numbers of *Gymnogramma* are beautifully cut into linear strips, and form almost a circle. By these they may be known from weedy, common Ferns. When they have made the third leaf they should be transplanted into very small pots, replaced under the glass, and remain there till fresh roots are emitted. After that, place them in a shady place, and treat them like their congeners.

G. TARTAREA (Infernal).—So named, I suppose, because the stems are black as ink. As a contrast to the deep blackness of the stems, the under side of the leaves is densely covered with a white powder, hence it has been called the Silver Fern. The fronds are broader at the base than the former species, often tri-pinnate; and the leaves, or pinnæ, are oval, the lowest one divided into lobes. The grand, distinguishing mark, however, is the white powder. Its culture is the same as for the preceding. These are the two species most remarkable in the genus, and the remainder I give the names of only as my space is limited.

G. calomelanas, beautiful black; a Silver Fern; *G. leptophylla* (Slender-leaved); *G. Merlensis* (Merlen's); *G. rufa* (Red Haired); *G. tomentosa* (Hairy).

There are some others, but not particularly interesting; *G. ochracea* is quite a weed in the Orchid-house, and has some little of the golden powder on the stems. It is often sold for the true Gold Fern. T. APPEEY.

(To be continued.)

NOTES ON THE ONION.

THIS useful bulb, on which I purpose making some remarks, has not always received the attention it deserves, neither in its cultivation, nor in the many uses to which it may be applied. The latter subject, doubtless, belongs to the department of some one else; but I cannot help thinking that a sort of morbid fastidiousness prevents its more general adoption at the tables of the affluent; the poor, less fettered by the trammels of society, perhaps, derive more benefit from it: and, assuredly, there is no vegetable grown more really wholesome; and when it is known that the produce, on good ground, amounts to something like the same measure as a good crop of Potatoes will turn up, it becomes a matter of economy to enquire how far it may be made a substitute for that uncertain tuber; and as the seed required for a given space is a much less expensive article than the roots wanted in the other, and the crop being sooner cleared off the ground, giving time for another one the same season, it follows that a good breadth of Onions, in a poor man's garden, is not altogether such a bad substitute for the Potato. The cooking, &c. of these, I would rather leave to more experienced hands, only I feel certain, were Onions more generally adopted, the unpleasantness (real or imaginary) arising from them would be less noticed, and a healthy, nutritious article of food (long kept in the back-ground) restored to its proper place.

In regard to the cultivation of this bulb, the late Mr. Knight held the opinion, that the English summer was not long enough to perfect this production, and that to do so the crop ought to be forwarded a little, by being sown late in the preceding season, and preserved in some way during the winter. This doctrine is, to a certain extent, true; but the inconveniences of the remedy proposed renders that almost as objectionable as the evil to be overcome; besides which, it does not always accomplish that, and Onions, the produce of two seasons growth, seldom keep well—I might say they never do. Mr. Knight's theory, however, was not by any means a vague or useless one, for Onions, forwarded by hot-beds, &c., and planted out in a favourable situation, in a northern or other bleak district, are much improved and their size much increased; while, in such places, it is almost impossible to obtain large, good bulbs, without some such aid, or adopting the biennial growth in some way or other; the most common being to sow a good breadth about the beginning of August, and by preserving them, by covering in some way until spring, to plant them out on fresh, well-prepared ground, taking care to nip out the seed-stem as soon as it appears, and to give them every advantage, in the shape of hand-hoeing, &c., which can be commanded. Another plan, resembling the last, is to select some small bulbs, not larger than Crocuses, from the stores of the previous year, and to plant them in the same way as the last; the produce will be a large, though not a solid description of bulbs: still, for use early in the season they are valuable.

Though the above methods may be advantageously adopted in many cases, and Onions sown under glass in January, and grown there till April, and then planted out, may also be applicable in other circumstances, yet the great bulk of the Onion crop is, and must be, sown when it is to be produced the same year, and, consequently, under such circumstances, ought to be accommodated with everything necessary to forward it, as good ground, well-manured, and open yet not bleak situation, and that good after-culture which tends as much to perfect this as any other crop we know of. However, we will suppose that the careful manager has long ago prepared the ground his Onion crop is to occupy, and that it has been lying exposed to the frosts and other changes of weather which benefit ground so much, and it be sufficiently dry, in the early part of March, to allow of its being trod upon without unduly pressing it; the seed must be sown forthwith, and the most usual way is to draw shallow drills, one foot apart, and to sow the seed very thin in those drills, covering them over after with the rake, sowing, perhaps, a few Radishes at random over the ground as well to draw while young.

Now, this is the best practice when the ground is not too stiff nor wet to prevent its being done at the proper time in that way; but when that cannot be accomplished, then let the ground be marked into beds, and the seed sown broadcast, and covered with soil cast out of the alleys; the result will be scarcely less abundant than by the other way, only, when they are sown in beds, they rarely are thinned sufficiently to ensure them swelling to the size that denotes perfection; but that duty must be insisted on, and the Onions, instead of being cramped together like the blades of glass in a well-bottomed piece of turf, ought to stand perfectly clear from each other, and when full grown they ought not to be touching each other in any way.

It may be worth while to remark, that in common with almost everything else, the number of varieties of the Onion have increased, or said to have increased, yet not to the extent of other things; for the good points of an Onion have not so much attracted attention as the earliness, flavour, or productiveness of Peas and similar vegetables, for the improvement of which so much has been said, if not done. Neither are our Onions dignified

with the title of anyone's name; doubtless, for the reason that they do not like to condescend to patronize an article so opposed to the ideas of poetry or politeness; be that as it may, there are sufficient varieties to select from; and the inexperienced would do well to confine himself to one or two sorts, of which he has reason to believe the seed to be good. The *Globe* is an excellent Onion, and so is the *White Spanish*, but the *Strasburgh* is said to keep better than either; it is, however, smaller. The *Deftford* is also good; in fact, if the seed be suspected, it is better to get a quantity of each, and mix them together, and then sow the mixture. The white kinds are so much alike that no particular difference is perceptible to ordinary observers; certainly, such kinds as the *Blood*, *Tripoli*, *Welch*, and *Silver Skinned* differ entirely from the general stock, and ought not to be sown with them, but the others may be sown as inclination directs. The *Silver Skinned*, being mostly used for pickling, ought to be sown thick, on some piece of poor land, and not so soon as the general crop.

J. ROBSON.

THE *Spanish fowls*, part of the stock of Mrs. Lydia Stowe, sold for very good prices, at Mr. Stevens's, on the 28th of February. Lot 151, a very superior Cockerel, fetched £11 10s. The highest sum for a Pullet, was £5 10s. The thirty lots averaged about £2 17s. each.

WEIGHTS OF PEAR FRUIT.

THE different horticultural periodicals of the day frequently attract their readers' attention to the accounts they give of the weights of Pear fruit exhibited at the different exhibitions, but never having met with any accounts either corresponding or approaching to the following, I have transcribed them, under the impression they may be interesting to many of the horticulturists and fruit growers included in the number of the readers of THE COTTAGE GARDENER.

In the month of October, 1834, the Board of Management of the Royal Jersey Agricultural and Horticultural Society, resolved on sending for his late gracious Majesty's acceptance, a collection of Jersey-grown fruit, and the following is a list (with weights attached) of part of the fruit sent—

103 Chaumontelle Pears, 88 lbs. 3 ozs.

16 Duchesse d'Angoulême Pears, 23 lbs.

35 Beurré d'Aremberg, 27 lbs. 10 ozs.

36 Crassanne, 20 lbs. 3 ozs.

2 Belle de Jersey, or *Uvedale's* St. Germain Pears, 6 lbs.,

and 12 Passe Colmar, not specified.

There were, also, some remarkable fine Apples sent, of the Golden Pippin, Nonpareil, Pigeonnet, and Court of Wick varieties. The two remarkable fruit of Belle de Jersey Pear, were grown and presented to the Society, for representation, by John Le Couteur, Esq., of Belle Vue, Jersey; the remainder of the fruits being contributed by different gentlemen, members of the Society, feeling interested in its proceedings.

And in 1841, another collection of Jersey-grown Pears were respectfully forwarded for her present gracious Majesty's acceptance, including

2 Duchesse d'Angoulême, 3 lbs. 5 ozs., or 1 lb. 10½ ozs. each.

12 " " selected, 17 lbs. 6 ozs.

1 Chaumontelle, 1 lb. 6 ozs.

12 " " selected, 13 lbs. 7½ ozs.

1 Crassanne, 1 lb. 1½ oz.

12 " " selected, 10 lbs. 4 ozs.

1 Beurré d'Aremberg, 14 ozs.

12 " " selected, 9 lbs. 6 ozs.

Here, again, the two monster Duchesse d'Angoulême fruit were again contributed by John Le Couteur, Esq., of Belle Vue, and the largest Chaumontelle and Crassanne, by James Hammond, Esq., of Fantaisie, Jersey, and the remainder in

the same manner as the preceding collection, the weights of the fruits being, in both cases, attested and guaranteed by the honorary secretaries' signatures in the reports of the season.

The following remarks were also included in the Honorary Secretary's Report for the season of 1841:—"The unusually moist season has affected fruit in different ways. The stone fruits, especially Apricots, were shrivelled, cracked, and flavoured. Peaches were few and ill-flavoured. Pears were fine, and of excellent quality or flavour (especially the Crassanne and Beurré d'Arenberg varieties—a fruit, referring to the last, which cannot be too highly prized), and their keeping properties seem to have been much impaired by the humidity of the season. The Crassannes, Passe Colmars, Chaumontelles, and Bergamotts de la Pentecôte (or Easter Beurré), having mostly ripened before the fifteenth of December."

Here I should remark, that the variety of Pear recognised as the Beurré d'Arenberg is the Glout Moreceau, under which name it is cultivated in Jersey. There is no resemblance between the two varieties but in the texture of the fruit's skin. The Glout Moreceau, which is much the finer of the two, is easily recognised by the vigour of the tree's growth; the wood is also much darker and thorny, and the fruits are (when fine) quintagonally divided, and elongated at both ends, with a beautiful, smooth, pale green skin; keeping from November to January, according to seasons. The Beurré d'Arenberg is smooth in the wood, paler in colour of the bark; smaller in the size of the fruit, being round at the end; at times a little russety, and ripening at the same season.

Hence, from the foregoing remarks of the Honorary Secretary, we have the gratification of learning, that the ripening season of Pear fruit is in a great measure dependent on the moistness of the season. An useful, though an antecedent corroboration of our present ideas and experience on the subject. We shall learn more about it, by-and-by; patience and perseverance will heal many of the ills arising from the conflict of opinions on this and other useful subjects.

The greater portion of the Pears included in these two short lists were grown on trees budded on Quince stocks, in moist, friable soils; a plan more profitable and preferable to any other I am as yet acquainted with.—C. B. SAUNDERS, *Casarean Nursery, Jersey*.

THE MANCHESTER POULTRY SHOW.

YOUR notice of the Manchester Poultry Exhibition induces me to trouble you with a few remarks, which, perhaps, may be found worthy of a place in *THE COTTAGE GARDENER*, as well as useful to those in other localities who may be meditating a "first poultry exhibition." There are only about six or eight amateurs here who have paid any attention to Poultry, and being desirous of encouraging and promoting, as far as their endeavours could, a taste in this neighbourhood for "the fancy," conceived the idea of an exhibition. These few amateurs set to work, raised a guarantee fund, which was most liberally responded to by the "merchant princes" here, and in a very few days over £300 was guaranteed by sums of £5 each. That the first Manchester Poultry Show should be worthy of their city, they determined to give prizes equal to those given at other large exhibitions, in order to induce the first breeders in the country to send their birds. I think they wisely resolved not to restrict an exhibitor to one pen of any particular class, thereby giving the amateur the chance of taking all the prizes, if he could, in any particular class. One regulation, I would suggest, should be altered in future shows; it was "no person (with the exception of cottagers) could exhibit without being a subscriber of 10s." This gave him the privilege of showing four pens of birds and having two admission tickets. The reason is obvious: a subscriber of 10s., having four pens, sent inferior specimens to fill up his allowance. There should always be a fixed charge per pen as well as per ticket. Had this been the case here, I believe the committee would have found themselves better off in a pecuniary point of view. The committee are deserving of the highest praise for their courtesy and un-

wearied exertions. I know many of them were in the Free Trade Hall, each day, from the opening to the closing of the exhibition, and suffered severely in consequence of the fatigue. The Amateur Prize of £5, for the best cock of five different breeds, afforded a fine opportunity to breeders of purchasing first-class stud birds, and I think is worthy of being copied at other exhibitions. The fine specimens exhibited here showed how exhibitors appreciated this prize. I think the liberality of Mr. John S. Henry, of Woodlands, Crimpsall, a member of the committee, ought to be made known: it was he who so handsomely presented this prize. Although I find he was an exhibitor amongst the Cochins, I regret that his liberality was not rewarded by a prize; but I doubt not that in a future occasion he will be more successful, as he has since purchased some of the best blood in the country. Your correspondent's remarks about the Cochins exhibited are very true; they were, indeed, with few exceptions, "a bad lot." Many of them were sold, the day after the exhibition, at auction, for the most ridiculously high prices for such specimens; and why? because they were puffed off as remarkably short-legged birds, and the produce of poultry belonging to our first breeders. One black cock, who, amongst a lot of very poor ones, had a prize here, was sold, after much competition, for £8 10s. But there is nothing like a good puff for selling fowls, as everything else. Really, Messrs. Sturgeon and Punchard's yards have been very much *drawn* upon for fine specimens and pedigrees. These gentlemen have much to complain of. If you think this worthy of notice, I shall be glad to inform you how "Manchester Poultry" progress.—J. R.

[We concur in the opinion of the writer of the above, that "pen-money" is likely to serve a good purpose in future Poultry Exhibitions, not merely as adding to their receipts, but as affording a useful check against too many entries on the part of a single individual. A graduated scale, after the manner of the assessed taxes on carriages or horses, might aid such a plan. The regulations at present in force, where this restriction is exercised, are notoriously evaded, the names of wives, relations, friends, and servants, who have no *bonâ fide* ownership in the birds, being continually employed to secure the admission of the extra number. A rule that is thus infringed with impunity becomes one of those things that are more honoured in the breach than the observance. We must congratulate Manchester on its late *debut* in the poultry arena, and have sanguine anticipations for its second season.]

HARDY BORDER PLANTS.

ERICA CARNEA.

THIS Heath of "flesh-coloured" flowers is often called *E. herbacea*, the Herbaceous, or the Early-flowering Heath.

It is a little shrubby, or under-shrubby, evergreen plant; is of procumbent habit, and still forms one of the snuggest little bunches that can be introduced into our flower borders, whether as a marginal plant to shrub plantations, a bunched to itself, or as a mixed plant with other hardy herbaceous plants. Wherever planted, it should always be a front plant in the beds from its dwarfness, its height being from six to nine inches.

It will thrive in almost any good garden soil, and in any situation; so that it might be "every one's plant;" but the soil most suitable to it is a mixture of one-half peat, well worked in with one-half common garden soil, and if with a spadeful or two of leaf-mould, all the better. This mixture should be used as a top dressing round about and in among the stems of such plants.

Though it will root from cuttings, like all the rest of its long family—the Heaths—yet, where the old-established bunches are kindly attended to once a-year, keeping their stems well top-dressed, as before said, all its stems that come in contact with the earth beneath or about them will put out abundance of roots, which enables the plant to be readily increased by rooted slips. Occasionally, an old plant taken up affords an abundant increase by division, like other common herbaceous plants.

Although this plant is a native of the Alps and mountainous parts of Germany, I have always found it to flourish best in

a cool soil, or in situations where it never seemed to want for moisture at the root.

It is certainly one of the most hardy of all plants, and one of the prettiest, too. Let the weather come as it may, during its flowering season, storm or sunshine never hurts it. Its time of flowering much depends upon the season and situation, but from the middle of January to the end of March is its usual time.

Its flowers are produced in wreath-like, one-sided spikes. Its oblong blossoms all lapping over each other in a pendulous form, and from the axils of its leaves, which are generally in fours up its numerous stems. The flowers are deep flesh-coloured, with black anthers extending a little longer than the mouth of the corolla; then the white pointal or stigma extends a little longer still, like a tiny beak through the black anthers, rendering the blossom altogether about half-an-inch in length. The leaves are line-like, smooth, half-an-inch in length, and of a dark green colour. The plant at all seasons looks neat in the borders, and at this time of the year is one of the most useful for those who require nosegays, for it is the prettiest hardy out-door plant we have in bloom at this season of the year.

This plant also seems just in its element when planted upon the rockery. Indeed, it is worthy of a place in any part of a garden, whether as an out-door, or in-door pot-plant.

It appears to have been introduced to this country in the year 1763, and is a native of Germany.

As this plant is apt to be plucked or trimmed very much in its flowering season, it rarely requires much cutting-in to keep it within a proper sized bunch to suit the spot it may be growing in, but should such be the case, this should be done as soon as the plant is out of bloom, and if not done before, when the borders where dressed off, a spadeful or two of peat-earth or leaf-mould, or both mixed together, added as a top-dressing. Thus kindly treated, snug little bunches may be seen in the same spots for very many years.

T. W.

ECONOMIC DIFFERENCES IN THE BREEDS OF SHANGHAES.

As I myself am well aware of the truthfulness of a *great portion* of the enclosed statement, and also feel every confidence in the veracity of my informant, I think the results of the trial of two different "strains" of Cochins may be perused with interest by, at least, some of your readers, more especially as I myself could not have accredited the result, had I not known it, and that a regular weekly account has been kept by their owner of the produce.

My friend's "run" embraces three-parts-of-an-acre of very dry pasture land, abounding with clover; at one end is a stable, divided equally with wire-work only, as is, also, the whole of the ground to which the two sets of birds have access; and most certainly neither lot of fowls could by any possibility intrude on the possessions of the others. Each set have nests in their own apportioned part of the stable, to which no one has access except the owner, being kept constantly locked; and as they are fed alike, their advantages are, of course, precisely similar; and, I think, perhaps, no two sets of poultry ever were so fairly tried (without any prejudice) "on their simple utility." The first day in October last, a cock and eight hens of very short-legged and well-built Cochins were placed in one division. These are as good in character, though a little out in colour, as could well be met with, even among the prize pens at most of our principal shows. In the other department, the same number of coarse, long-legged, and spare stilty birds (CALLED Cochins, and lately too generally shown as such) received the same attention. The owner alone fed these fowls, thrice daily, viz., before leaving for business, at dinner-time, and in the evening; the corn being actually "measured in a bowl to each lot." I have been thus particular, to preclude the idea of favoritism. I will, therefore, now content myself by saying, all were birds about the same age to a week or so, supposed never to have laid, being chickens of 1853. It will be seen how exceedingly different the return of eggs, and how much more the tall, spare birds seemed affected by the severe winter than their more compact fellows; whilst the very great regularity of laying of the latter, proves, I con-

ceive, the very best possible evidence that their superiority is NOT the IDEAL affair some would suppose. My friend merely kept them "to see the difference, if there was any," and never would sell either fowls or eggs.

		Well-built and short-legged birds.	Spare and stilty birds.
October	1 to 7	0	0
"	8 to 15	0	0
"	16 to 23	2	5
"	24 to 31	7	11
November	1 to 8	16	18
"	9 to 16	30	24
"	17 to 24	38	26
"	25 to 2 Dec.	34	25
December	3 to 10	36	22
"	11 to 17	35	27
"	18 to 25	38	24
"	26 to 2 Jan., 1854	39	21
January	3 to 10	39	16
"	11 to 18	38	7
"	19 to 26	34	2
"	27 to 31	36	5
February	1 to 7	38	8
"	8 to 15	31	6
"	16 to 25	33	5
		524	252

I am fully aware there is an inaccuracy as to the *division* of the weeks, but as this did not interfere any way with the returns, I have faithfully made copy of the manuscript, as lent me by the owner. The result determines their owner to use the least valuable lot for the table, and he promises me the result of a similar trial with some pretty good Spanish fowls, tested the same way, on the same walk, and from May-day to May-day following. If spared to see this result, I consider it will be VERY interesting, as my friend will not allow his fowls to sit, "only wishing FAIRLY to test their egg-producing qualities," and having a better opportunity of so doing than any other amateur I am acquainted with, I feel it certain the returns will be faithfully rendered.

I fear the above will be tedious, but it has been so fairly conducted, I think it conveys really USEFUL information, for which reason I have forwarded it.—EDWARD HEWITT, Sparkbrook, near Birmingham.

BEE-KEEPING FOR COTTAGERS.

(Continued from page 389.)

SECTION 3.—CALENDAR OF OPERATIONS.

INTRODUCTORY.—We will commence our Calendar with March, as then the bees first begin to rouse themselves from their winter's rest. We will assume that the first section of these papers has been carefully considered, and that something is known of the habits of bees: that it is intended to commence a new system; that some portion of the necessary apparatus is in a forward state; and that you are burning with a desire to give your neighbours a wrinkle or two before long. Instead of writing at length the times in the month when the various operations are to be performed, (b) placed before a direction, will mean that it is to be attended to in the beginning; (m) in the middle; and (e) at the end of the month: where no letter is prefixed, the direction must be attended to all through the month. The times mentioned are generally correct: in cold and wet seasons, however, the operations should be performed a week or ten days later than is directed; a little reflection on this point will be the safest guide. We should also state, that we are writing in a garden county, where food is plentiful, considerably earlier than in mountainous and grass counties. According to our original plan, the method of performing the various operations will be detailed in Section 4.

MARCH, b.—The Queen has now been laying for some time in strong hives, the hives should, therefore, be kept warm; to do this, remove pots and glasses from the tops,

and cover the holes with pieces of stout wood, large enough to overlap the holes on all sides; warmth assists the coming forward of the brood.

b. Weigh your hives; if the net weight (that is, the weight after allowing for the weight of the hives and floor-boards,) be less than 12 lbs., feed a little.

b. Change your floor-boards at this weighing; they will, by this time, have very likely become damp and dirty, particularly where condensing has not been attended to. In changing floor-boards, always carefully look for and destroy the small grubs which fix themselves at the junction of the hives and floor-boards.

b. If no water is near, supply some; the bees require it to moisten the pollen wherewith they feed the brood.

As the weather warms, and the bees begin to crowd in coming out, the entrances must be widened; should the weather change and set in cold they should be again contracted.

Look out for and destroy queen wasps; all wasps now about (or rather, that will be about before long), are queens, and the would-be mothers of thousands; kill them all, for wasps are amongst the worst enemies of bees.

Keep everything about the hives trim and clean, rout up ants nests, brush away spiders, watch for, catch, and kill, all moths, slugs, and other vermin; these directions should be attended to all the year round.

APRIL.—The directions given for last month apply equally to this, except as to the floor-boards, which need not again be changed.

The chief danger to be feared now is want of food; the supply obtained by the bees is still scanty, whilst the consumption day by day increases, and many hives that have lived through the winter perish now for the want of a little attention; if the bees in one hive be idle, whilst those in others are all busy, feeding should be at once attended to; idleness, and hanging about the entrance, are frequently attributable to weakness from scarcity of food.

e. Send hives to the bee-keepers from whom you are about to buy, or otherwise obtain, fresh swarms, that all may ready. Before doing so, singe off all rough straws from the inside; they only hinder the bees in their work.

Stock-bives may be bought as late as the end of the month, provided they be moved from a distance of three or four miles. This is, perhaps, the safest time to buy stocks, as all fear of their perishing is now at an end. Care should be taken, in buying stocks, to select prime swarms of the last summer: they may be known by the combs being lighter in colour than older stocks. It will be prudent (unless you can trust the man from whom you are about to buy) to seek the advice of some experienced friend in making a purchase.

(To be continued.)

SEA WEEDS.

(Continued from page 386.)

4. GRACILLARIA. Grev.

FROND filiform or rarely flat, fleshy-cartilaginous, continuous; cellular, the central cells large, empty, or full of granular matter; those of the surface minute, forming densely packed horizontal filaments. Fructification 1. convex tubercles (coccidia), having a thick pericarp composed of radiating filaments, containing a mass of minute spores; 2. tetraspores imbedded in the cells of the surface. Name signifying slender.—Harvey.

1. GRACILLARIA MULTIPARTITA (Much-divided).—A rare and handsome weed, found on our southern shores, very like some of the Rhodymenia in appearance. From four to twelve inches high. Colour a rather deep dull puce or purple.

2. G. COMPRESSA (Flattened).—"Very rare, and thrown up from deep water;" sometimes growing on coral. It has been found by Mrs. Griffiths, at Sidmouth; Mrs. Gulson, at Exmouth; and Miss Turner, in Jersey. When fresh the substance is very tender, but becomes tough in drying. Colour dull red. Frond from six to twelve inches long.

3. G. CONFERVODES (Conferva-like).—Not uncommon; growing on rocks in the sea. More than a foot and a half

in length. Colour deep red, and substance cartilaginous; and it does not adhere to paper on drying. The plant may be distinguished by its tubercles, which are large.

4. G. ERECTA (Upright).—On sandy rocks near low water; bearing fruit in winter. Fronds numerous; one or two inches high; of a red colour. Very rare.

ORDER 12.—CRYPTONEMIACEÆ.

"Purplish or rose-red sea-weeds, with a filiform or (rarely) expanded, gelatinous or cartilaginous frond, composed, wholly or in part, of cylindrical cells connected together into filaments. Axis formed of vertical, periphery of horizontally radiating filaments. Fructification 1. conceptacles (favellidia) globose masses of spores immersed in the frond or in swellings of the branches. 2. tetraspores variously dispersed."—Harvey.

GENERA OF THE CRYPTONEMIACEÆ.

- | | |
|------------------|--------------------|
| 1. Grateloupia. | 12. Ginnunia. |
| 2. Gelidium. | 13. Kalymenia. |
| 3. Gigartina. | 14. Tridaca. |
| 4. Chondrus. | 15. Catenella. |
| 5. Phyllophora. | 16. Cruoria. |
| 6. Peyssonelia. | 17. Naccaria. |
| 7. Gymnogongrus. | 18. Gloiosiphonia. |
| 8. Polyides. | 19. Nensaleon. |
| 9. Furcellaria. | 20. Dudresnaia. |
| 10. Dumontia. | 21. Crounaria. |
| 11. Halymenia. | |

1. GRATELOUPIA.

Name in honour of Dr. Grateloup, a French algologist. "Frond flat, pinnate solid, and dense in structure."

1. G. FILICINA (Thread-like).—Very rare; growing on rocks and stones in the sea. Colour dull purple, sometimes greenish. Fronds of British plants seldom more than two inches high. In appearance very like *Gelidium coraceum*.

2. GELIDIUM.

"Frond, between cartilaginous and corneous, plano-compressed, distichously branched, branches pinnate or bipinnate, pinnæ spreading or horizontal, obtuse capsules spherical, immersed in the extremities of the ramuli."—Greville.

1. GELIDIUM CORACEUM (Horny).—In rocky pools, and on rocks in the sea; very common. A most variable plant, so that Dr. Greville, in his "Algæ Britannicæ," enumerates twelve varieties.

2. G. CARTILAGINEUM (Gristle-like).—"A very doubtful native."

3. GIGARTINA.—Lamocer.

Frond cartilaginous, filiform (irregularly divided) purple, or deep red; fructification of two kinds: 1, external tubercles; 2, tetraspores scattered through the surface of the frond."

1. GIGARTINA PISTILLATA (Pistilled).—Growing on rocks near low water mark; very rare; "coast of Cornwall and Jersey." Dr. Landsborough, in his "British Sea Weeds," says, "It is a remarkable plant; the tubercles are large; generally near the point of the branch, which projects like a horn, the colour is a dull purplish or brownish-red; it does not adhere to paper."

2. G. ACICULARIS (Needle-like).—Rather like the preceding, but not so stout; of a dull purple, becoming pink in fresh water; rare in the south of England. I have had specimens from Jaffa.

5. G. TEEDII (Teed's).—"Frond membranaceous, flaccid (horny when dry), flat, linear, repeatedly pinnated with slender, horizontal, distichous, subulate ramuli; capsules globose, on the ramuli."—Greville. On rocks; very rare; fronds from two to five inches high.

4. G. MAMILLOSUS (Nippled).—On rocks in the sea near low-water mark; common fronds from three to six inches long, cartilaginous; the capsules on little stalks, scattered all over the frond; colour dark purple. Sometimes used in the same way as the Carrigeen or Irish Moss.

4. CHONDRUS.

Frond cartilaginous, dilating upwards into a flat, nerve-

less, dichotomously-divided frond, of a purplish or livid-red colour.—*Grav.* Named from a word signifying cartilage.

1. *CHONDROS CRISPUS* (Curled).—Very common, and of a very variable form. "Turner figures ten, and Lamiouroux thirty-five varieties." "At one time it was much in repute for furnishing gelatine, a light, easily-digested food for invalids; and as the chief supply at first came from Carrigeen, in Ireland, it was called Irish Moss, or *Carrigeen*. The market-price, at one time, was as high as 2s. 6d. per pound; had it continued at that rate, it would have yielded more to the industrious inhabitants of the sea-shore than even a crop of their favourite potatoes. The fashion, however, has gone out, and the price has fallen; but the food prepared from it is as good as ever, and they who have tasted it will need no coaxing to partake of it a second time."—*Rev. Dr. Lindsborough.*

2. *C. NORVEGICUS* (Norwegian).—A rather rare and pretty plant, chiefly found in the south of England and Ireland; fronds from two to three inches high; "colour a deep, rather dull, blood red."

Though so early in the year (February), marine plants have already begun to grow; and I have had a specimen of *Delesseria sanguineum* sent to me with lovely pink fronds, more than an inch long, and also a specimen of the pretty *Ulva lactuca*, of the most bright and delicate shades of green, together with *Porphyra laccusata*, glossy as a satin ribbon, bright and beautiful, and full of promise of what is to come. Like the Turtle and the Swallow, these plants, hidden as they are from our sight by the waves of the ocean, know their appointed time, and once more appear to gladden the eye with their exceeding beauty. How wonderful is the diversity of the works of God, the endless variety, and the provision that is made for every one! How the land plants require fresh water for their support, and the sea plants salt water for theirs; so that what is refreshing to the one, would be death to the other, and the reverse. The more we study the works of God, the more shall we be inclined to declare that His wisdom is infinite, and His power almighty! And surely His loving-kindness is also great, thus to refresh us with so many beautiful objects, and to give us some faint glimpses of Himself in His works. Both the earth and the sea are full of them! S. B.

(To be continued.)

POULTRY-YARD REPORT.

SPANISH v. SHANGHAES.

I PURPOSE, during the present year, instituting a comparison between the Shanghae and Spanish races. Mine, of the latter, are Minorca, a breed which has received at the hands of the great Spanish breeder merited praise, and from what he says, I presume we may calculate the laying powers of the Minorca as equal to those of their now aristocratic relations.

Subjoined is the report for the month of January.

JANUARY.

Stock SHANGHAES, 9 pullets of 1853. Of these two laid in December, and then became broody. One laid in January, and is now sitting; one is very ill; only three laying.

Eggs during the month 36

lbs. oz. dms.

Weight of eggs.. 3 13 2

Highest weight of single egg .. 0 2 0

Stock MINORCAS, 3 old hens, 4 pullets of 1853. Of these only one of the old hens has laid, and that only during the last few days of the month.

Eggs during the month 4

oz. drs.

Weight of eggs..... 8 6

Highest weight of single egg 2 3

I calculate the eating powers to be about equal, and I cannot say that I have found the Shanghaes so voracious as some give them credit.

I may state that the house is the same, the partition being of lattice-work; it is warmed by a stove; the Minorcas have the warmer position.—H. B. S., *Monmouthshire.*

NEW BULB.

THE MESSRS. Lec, of Hammersmith, sent a most beautiful new half-hardy bulb, in full bloom, to the last meeting of the Horticultural Society, which bulb was "sent out" by Mr. Backhouse, of York, who introduced it from Caffraria. It was labelled, *Imatophyllum sp.*; but Dr. Lindley has named it, provisionally, as *Vallota miniata*. I told Mr. Lee it was a *Vallota* the moment I saw it; but I asked him, particularly, to save me one or two of the seed-pods, as it is only by the seed and pod that most of the plants in this section of *Amaryllids* can be made out from one another. *Vallota*, itself, is a true *Cyrtanthus*, or the latter is a true *Vallota*, with curved flowers, as I have myself proved by crossing. There is not the least dependence, for generic distinctions, to be placed on the length, shape, size, and directions of the style and filaments, or on the way the filaments are attached to the parts. In some of the *Cyrtanthus*, the filaments, or stamens, are joined nearly their whole length to the inside of the tube. In the old *Vallota* they are only joined one-third of their length, and there is hardly a tube at all to the flower. In this new species the filaments are wholly free, and the six divisions of the flower are free of each other also, throughout their length, which is more curious. The plant, without the flower, would pass for a *Clivia*; and the flowers, without the plant, would suggest *Vallota*.

There is another turn to the question. If the scape is hollow it cannot be a *Clivia*; if it is solid, the plant is not only not a *Vallota*, but does not come into the same section as *Vallota*. I very much doubt if it is a true bulb at all, but only a strong, fleshy-rooted plant, like *Agapanthus* or *Clivia*. Yet I know that Mr. Backhouse sold a dry bulb to Mr. Jackson, near me, which we supposed would turn out to be the same as Mr. Lee's plant; but that bulb is a true *Veltheimia*. All this, however, belongs to the true naming of the plant, and has nothing to do with its value as a most desirable addition to our bulbs.

Here is my home description of it. A strong, fleshy-leaved bulb; the leaves embrace each other at the bottom, and form a column; the largest leaves are fifteen to eighteen inches long, curving out a little from each side of the centre of the column; they are longer, more smooth, and less blunt at the points than those of *Clivia nobilis*, but in that style; and there are six of them on each side, or twelve leaves to the whole plant, and some more coming up in the centre. The flower-scape is from ten to twelve inches high, flattened on two sides. The flower-heads, or umbel, holds twelve flowers, which spread out all round on peduncles, or flower-stalks nearly two inches long; seven flowers were open and five in bud; the opening of the flower is two inches across; the six divisions stand free of each other all the way from the bottom; the three which correspond to a calyx (sepaline segments), are a little shorter and more narrow than the other thin or petaline divisions; the colour is soft orange-scarlet, or vermillion, getting lighter into a lemon-yellow down in the neck of the flower—the stamens are inserted at the very bottom, and are otherwise free, they are not quite so long as the flower; the anthers are attached below the middle, and are full of good pollen: the style or stigma is slightly three-cleft.

As a warning to the owners of this valuable plant, I may remark, that it is very possible the seeds will be ripe long before the pod has turned colour, and if so, they will assuredly sprout before the pod bursts, and they are then as good as lost; if we are right in the name, the pod will burst open near the bottom—not across the top as is more usual. Some of my crosses in *Cyrtanthus*, and the pollen of *Vallota* will come very near to this plant, but the flowers will be almost sessile, as that part may take after the mother.

D. BEAVER.

BRAHMA POOTRA FOWLS.

As there has been considerable controversy of late as to the Brahma Pootra fowls which have been imported from America being a genuine breed, I thought it might not be uninteresting for your readers to know that I have just received a very fine Brahma cock direct from China; a pair were taken on board the vessel, but unfortunately the hen died on the voyage. The bird I have received is a noble fellow, with a beautiful arched neck, and a bold round chest, compact body, and very broad behind, tail short, and slightly inclined, well-feathered, short yellow legs. His head is very perfect, he has a good, upright single comb, with short yellow beak, and a good sized regular wattle. The colour of the bird is much darker than the American Brahmas; his neck and back hackle are of a lightish grey pencilled with black, the whole of the body, with the exception of wings and tail, is a light grey barred with black, each bar shaded with green; wings black and grey shaded with green; tail black, and shaded in a similar manner.

I am partly induced to trouble you with this, by way of proving to the author of "The Poultry Pentalogue" that all Brahmas are not manufactured in America. I am not surprised that that gentleman should express such an opinion, when I know, that by reason of the scarcity of these birds in this country, that they have been crossed with all colours of Shanghaes. How frequently have we seen of late a pen of Brahmas, at an Exhibition of Poultry, having almost as many buff feathers in their plumage as a pure-bred buff Shanghae, and some very much like a Partridge. Such birds are, undoubtedly, the result of a cross with Shanghae fowls, and are not by any means entitled to be called Brahma Pootras. Last summer, I crossed a Brahma Pootra cock with a buff Shanghae, the result was, that the young birds plumage turned out a mixture of brown, grey, and black, and not one of them came like the old Brahmas. By breeding in the right strain, in every instance the young birds came exactly like their parents to a feather; this is a good proof of the breed being genuine. I consider the pure bred Brahmas to be decidedly the most handsome fowls that have been imported.—J. S. BRAND.

P.S. A friend of mine, who has been trading between Shanghae and Hong Kong for the last ten years, assures me that he has taken a great many Brahma Pootras from the former to the latter place.

[The controversy respecting "*Brahma Pootras*" or "*Grey Shanghaes*," we apprehend, stands thus, "Are any specimens of the birds thus designated a distinct original breed?" Now, the mere fact of importation, on which so much stress is often laid, of itself proves nothing with regard to this proposition, but leaves it still an open question as to whether these are only a variety of the Shanghaes, or the result of a cross, either of which conditions may be perfectly compatible with their importation. The P.S. to Mr. Brand's communication would even strengthen the former supposition, since Shanghae is there referred to as one of their habitats, a locality, be it remembered, far away from the districts watered by the river Brahmapootra, whence the distinctive name has been assumed. What we require as proof of the distinctness of any breed of fowls, would comprise permanent points of distinction in form, habits, or character, for colour alone, granting that that feature could be here established, would only place them in the Shanghae list, and the former position, we imagine, has not as yet been made out for them.—W.]

"ON A NEW METHOD OF PROPAGATING PLANTS."

BY E. J. LOWE, ESQ., F.R.A.S., F.G.S. &C.

"THE author states that the experiment of a new method of propagating plants has been so successful, that he has taken the liberty of forwarding to the Royal Society this short paper upon the subject, for the guidance of those who are interested in the advance of horticulture.

"It had occurred to him, that if a cutting of a plant were sealed at the base, so as to exclude the moisture of the soil

from ascending the stem in injurious quantities, the method of striking cuttings of most species of plants would not be so precarious a process as at present; and accordingly some collodion was obtained in order to make the experiment.

"With respect to this new process, he states, that immediately upon the cutting being severed from the parent stem, the collodion was applied to the wound, and then left a few seconds to dry, after which the cuttings were potted in the ordinary manner.

"To test the value of this new process more effectually, duplicates of all the species experimented upon were at the same time similarly planted, without the collodion being applied to them.

"Experiments were carried on in two different ways; one batch of cuttings being placed on a hotbed, whilst a second batch was planted in the open ground, without even the protection of glass.

"*First Batch.*—All of which were placed on a hotbed on the 1st of September, and examined on the 1st of October:—

Stove Plants.

Number of cuttings with collodion applied.	Name of Plant.	Number of cuttings which took root.	Number of cuttings without the application of collodion.	Number of cuttings which took root.
1	<i>Ixora coccinea</i>	1	1	0
1	<i>Tacsonia manicata</i> ..	1	1	1
3	<i>Franciscea Hopeana</i> .	3	3	0
3	<i>Franciscea Pohlana</i> .	3	3	0
2	<i>Gloxinia Maria van Houtte</i>	0	2	1
2	<i>Begonia incarnata</i> ..	2	2	1
8	<i>Achimenes patens</i> ..	7	8	6
2	<i>Hoya bella</i>	2	2	1
2	<i>Rondeletia speciosa</i> ..	2	2	1
2	<i>Allamanda nerifolia</i> .	2	2	1

Greenhouse Plants.

6	<i>Boronia serrulata</i> ..	5	6	0
3	<i>Polygala dalmaisiana</i>	1	3	0
6	<i>Polygala grandiflora</i> .	3	6	2
6	<i>Verbena luna</i>	6	6	6
1	<i>Chorozeema cordata</i> .	1	1	0
1	<i>Epacris pallida</i>	0	1	0
2	<i>Leschenaultia formosa</i>	2	2	1
1	<i>Swainsonia astragalifolia</i>	1	1	0
1	<i>Swainsonia galegifolia</i>	0	1	0
2	<i>Abelia rupestris</i>	2	2	0
4	<i>Plectranthus coloratus, picta</i>	2	4	2

"*Second Batch.*—Planted in the open ground on the 1st of September, and examined on the 1st of October:—

Hardy Plants.

Number of cuttings with collodion applied.	Name of Plant.	Number of cuttings which took root.	Number of cuttings without the application of collodion.	Number of cuttings which took root.
12	<i>Garrya elliptica</i>	5	12	1
12	<i>Erica vagans</i>	7	12	4
18	<i>Bupleurum longifolium</i>	6	18	0
12	<i>Laurus foetens</i>	10	12	7
6	<i>Rose, Souvenir de la Malmaison</i>	4	6	3
12	<i>Taxus baccata, golden leaved var.</i>	8	12	4

	Total number of cuttings to which collodion was applied.	Number of cuttings which took root.	Total number of cuttings without the application of collodion.	Number of cuttings which took root.
First batch	59	46	59	23
Second batch ..	72	40	72	19

"The experiment, the author considers, speaks for itself. Notwithstanding the season being too far advanced for the full benefit of the process to be thoroughly observed, still twice as many cuttings took root treated by the new method as had rooted by the old. The mortality in the open ground was increased by slugs having eaten off above the soil some of the cuttings; those thus damaged were examined after they had been in the ground a month, and it was found that the collodion was quite as sound as when first applied. It would therefore appear that the collodion seals the wound of the cutting, and protects it from the fatal effects of damp, until roots are prepared to force through the covering of gun-cotton. It is further stated, that the application of this solution has been found to be exceedingly beneficial in the pruning of such plants as *Euphorbia speciosa*, *Impatiens latifolia*, *Impatiens latifolia-alba*, *Hoya bella*, *Hoya imperialis*, &c., the cut branches being prevented from bleeding.

"It is the author's intention next spring to follow out this experiment, in budding and grafting, as he considers that it will also be useful in this branch of horticulture.

"Gutta-percha, dissolved in ether, was in some instances substituted to heal the wounds caused by pruning; yet owing to this solution not drying as rapidly as collodion, the first, and sometimes the second application was not sufficient.

"The effect of these solutions upon cut flowers was very marked. Two branches were gathered as nearly alike as possible; to the flower-stalks of the one, collodion was applied. These flowers were placed in vases filled with water; those coated over with collodion began to fade in thirty-six hours, and many were quite dead in three days; whilst the flowers merely placed in water in the ordinary manner remained fresh and healthy. Those that faded soonest were *Reseda odorata* and *Tropaeolum majus*, and those which were least affected were *Tagetes erecta* and *Senecio erubescens*."

"ON THE ACIDITY, SWEETNESS, AND STRENGTH OF WINE, BEER, AND SPIRITS."

BY H. BENICE JONES, M.D., F.R.S.

(1) "THE acidity of the different liquids was determined by means of a standard solution of caustic soda. The quantity of liquid neutralized was always equal in bulk to 1000 grs. of water at 60° F.

"The acidity in different—

Sherries varied from 1.95 grs. to 2.85 grs. of caustic soda.			
Madeira	" 2.70	" 3.60	"
Port	" 2.10	" 2.55	"
Claret	" 2.55	" 3.45	"
Burgundy	" 2.55	" 4.05	"
Champagne	" 2.40	" 3.15	"
Rhine wine	" 3.15	" 3.60	"
Moselle	" 2.85	" 4.50	"
Brandy	" 0.15	" 0.60	"
Rum	" 0.15	" 0.30	"
Geneva	" 0.07	"	"
Whisky	" 0.07	"	"
Bitter Ale	" 0.90	" 1.65	"
Porter	" 1.80	" 2.10	"
Stout	" 1.35	" 2.25	"
Cider	" 1.85	" 3.90	"

"Hence the order in which these wines may be arranged, beginning with the least acid, is Sherry, Port, Champagne, Claret, Madeira, Burgundy, Rhine, Moselle.

"(2.) The sugar was determined by means of Soleil's sac-

charometer, which at least gives the lowest limit to the amount of sugar.

"The sweetness in different—

Sherries varied from 4 grs. to 18 grs. in the ounce.			
Madeira	" 6	" 20	"
Champagne	" 6	" 28	"
Port	" 16	" 31	"
Malmsy	" 56	" 66	"
Tokay	" 74	"	"
Samos	" 88	"	"
Paxarette	" 94	"	"

"Claret, Burgundy, Rhine, and Moselle contained no sugar.

"Hence the order in which these wines may be arranged, beginning with the driest, is—

Claret	Champagne
Burgundy	Port
Rhine	Malmsy
Moselle	Tokay
Sherry	Samos
Madeira	Paxarette.

"In a dietetic view, assuming that the sugar becomes acid, then the mean results as to the acidity of the different fluids examined, beginning with the least acid, is—

Geneva	Champagne
Whisky	Cider
Rum	Port
Brandy	Porter
Claret	Stout
Burgundy	Malmsy
Rhine wine	Madeira
Moselle	Ale
Sherry	Tokay
Madeira	

"(3.) The alcohol was determined by means of the alcoholometer of M. Geisler of Bonn

"The strength of different samples of—

Port varied from 20.7 per cent. to 23.2 per cent. by measure.

Sherry	" 15.4	" 24.7	"
Madeira	" 19.0	" 19.7	"
Marsala	" 19.9	" 21.1	"
Claret	" 9.1	" 11.1	"
Burgundy	" 10.1	" 13.2	"
Rhine wine	" 9.5	" 13.0	"
Moselle	" 8.7	" 9.4	"
Champagne	" 14.1	" 14.8	"
Brandy	" 50.4	" 53.8	"
Rum	" 72.0	" 77.1	"
Geneva	" 49.4	"	"
Whisky	" 59.3	"	"
Cider	" 5.4	" 7.5	"
Bitter ale	" 6.6	" 12.3	"
Porter	" 6.5	" 7.0	"
Stout	" 6.5	" 7.9	"

"The Burgundy and Claret have less alcohol than was found by Mr. Brande forty years ago in the wines he examined. The Sherry is now stronger, the Port is not so strong, the Marsala is weaker, the Rhine wine is the same strength, the Brandy is as strong as formerly; the Rum is nearly half as strong again; the Porter is stronger, and the Stout rather stronger than formerly.

"Lastly, the specific gravity of each liquid was taken. As this however chiefly depends on the amount of alcohol and sugar present, and as these were directly determined, the specific gravity may be taken as a distant control on the amount of sugar present.

"Thus, in those wines in which the amount of alcohol was the same, the specific gravity was found to vary with the amount of sugar found by the saccharometer."

[Proceedings of Royal Society, VI. No. 101.]

RICE MEAL AS PIG FOOD.—COST OF POULTRY FEEDING.

ONE of your Correspondents, who signs himself T. I., asks for information respecting rice meal as food for pigs. At the

latter end of last year I purchased some rice in the grain (slightly damaged), and which, with the addition of a little Indian meal all boiled together, I fed a pig for home use, and I must say I never saw one thrive better; for in about seven weeks he increased in weight from about 160 lbs. to 285 lbs. With regard to the quality of the bacon, I must state, that I do not think it equal to some which I had previously from pigs fed upon oatmeal. It is, however, sweet, and of good colour, but rather overdone with fat.

You have occasionally requested Correspondents to furnish information respecting the keep, &c., of Poultry; and as I have taken some pains to ascertain the cost of mine, I must state, that I think young poultry, especially cockerels, eat more than full-grown birds; whilst of the latter, laying hens eat considerably more than either cocks or hens which are not at the time producing eggs.

I have, at present, twenty-one hens and pullets (Shanghaes) with the exception of two black Spanish and two Shanghae cockerels, and their consumption weekly is as nearly as possible—

	s.	d.
8lbs. of Barley Meal, at 1½d. per lb.	0	10
4lbs. of Bran, at ½d. per lb.	0	2
17lbs. of Grain*, at 1d. per lb.	1	5
	2	5

Averaged, 1½d. per week each.

They have, also, the peelings of Potatoes boiled and mixed with the meal. They are kept in a yard about fourteen yards by eight, and have also the run of a grass plot. They are in good condition (in fact, I lost two hens a couple of months ago from over-feeding, and was obliged to lessen the amount of food given them), and I have had from forty to fifty eggs weekly since the beginning of the year, although some of my pullets have not yet commenced laying. I quite agree with the remarks you made a short time ago, as to the superiority of Shanghaes, on the whole, over our other kinds of fowls.

I last year had Game, Dorking, Black Spanish, and Shanghaes. The two former I have given up, as the Game I found to be poor layers, and there was no keeping the Dorking within moderate bounds. My Black Spanish lay large eggs, and about five in a week each, but for about two months during moulting time I had not a single egg from them, whilst some of my Shanghaes were laying when they were almost destitute of feathers.—T. S.

* Consisting of Indian Corn, Barley, Oats, and Wheat sweepings.

TO CORRESPONDENTS.

* We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

THE PIP IN POULTRY (H. M.).—As I have stated elsewhere, there is no such disease as Pip in fowls; the dry scaly tongue is always caused by febrile disturbance, arising from over-feeding, stimulating food, or some other cause. It constantly occurs in any inflammatory disease of the respiratory organs, as the irritation caused by the worms in gapes, in catarrh, roup, &c.; it should always be regarded as a symptom, never as the disease itself; the dry tongue occurring in human patients is precisely similar. If the scale of membrane is loose, it should be removed, and a little borax may be dissolved and poured into the mouth. Should there be no evident cause, a dose of alterative medicine may be given, as a teaspoonful of castor oil, or one grain of grey powder.—W. B. TEGETMEIER, Willemsden.

PIG-FATTING (T. L.).—The best mode of fattening pigs is to combine roots, meal, and any milk slops attainable. We think the value of the roots, comparatively, stand thus:—1st, Parsnips; 2nd, Mangold; 3rd, Swedes; 4th, Carrots. The comparative value of the meals, thus:—1st, Barley; 2nd, Oats; 3rd, Indian Corn; in addition, the various dressings from Wheat, such as Pollard, &c. Some use damaged Rice. As a general principle, it is well to mix these things. The roots boiled, mixed up with meal, and given warm. Feed three times a day, give as much as they can eat.

INDIAN GAME FOWL (J. T., Cirencester).—The Indian Game Fowl is a bird of greater weight and more compact figure than our English breed, but inferior in symmetry and carriage. They vary in respect of colour. The Golden Spangled Hamburg Cock must have a full but firm rose comb, tapering back to a point, which is slightly curved upwards.—W.

WEEDING THORNS (Excelsior).—You can obtain them of any nurseryman who advertises in our columns. *Filberts* the same, and you may plant them now, if they are moved carefully, but this should have been

done in November. If you refer to previous volumes you will find several essays on their culture. It is quite impossible to give such essays in answers to questions.

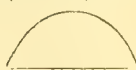
CUTTINGS (Easton Court).—You will have seen that we have adopted your suggestion. We are always obliged by any hints.

CUCUMBERS (W. W.).—The bed on the flue will be a failure; it will bake the soil, and scald the roots of the plants.

HERACLEUM GIGANTEUM (W. E.).—Messrs. Hardy and Son, Florists, Maldon, Essex, always keep a stock of this plant; but we should think you might obtain it of any extensive florist.

HAMILTON'S CATALOGUE (Effie).—You will be as sure of getting good Balsam Seed from Mr. Hamilton, Margaret Street, as you would from any other equally respectable seedsman. As far as we have noticed, his arrangement of the *Roses*, both as to colours and classes, is quite correct, and the selection very good.

A HILL AND ITS BASE (A Reader).—The hill is of this shape—



and you ask, if "this hill of one acre in surface will grow more than if the land under it in a horizontal line were sown?" The soil in both cases being equally fertile." Of trees, or corn, which can only grow perpendicularly, the horizontal line forming the base of the hill would grow as much as the semi-circular outline; but of grass, or other plants that creep over the surface, the semi-circular would bear the largest quantity.

INTRODUCTION TO BOTANY (W. Johnston).—We prefer Henfrey's *Rudiments of Botany* to any other to begin with. It is very cheap.

SHELL-LESS EGGS (Penelope).—Do not feed your hen so stimulatingly. Leave off the meat entirely; mix bran with the ground corn, half-and-half, and give her, at intervals of two days, three pills, each pill containing one grain of calomel, and one-twelfth of a grain of tartar emetic. Give her Cabbage-leaves, and any other green food you can obtain.

WILLIAM ADAMS (C.).—The ten shillings has been gratefully received.

RICE-MEAL FOR POULTRY (A Regular Subscriber).—It is very good given alternately with corn or other more stimulating food. We should mix it half-and-half with barley-meal. We know of no mode whereby broody hens can be prevented going into nests where they are not welcome, except the effective mode of shutting them up in a place by themselves.

GOLDEN-PENCILLED HAMBURGH EGGS (W. Dyer).—Some such as you require have recently been advertised in our columns.

GOULD (G. P. H.).—This shedding its fruit, is either grown in an unsuitable soil, or is a tender variety, and is not grown in sufficient heat. We cannot say more without further particulars.

WHITE ON COCHIN COCK'S COMB (A Constant Reader).—This is called "the White Comb." It is easily removed by rubbing it with an ointment of cocoa-nut oil, with a little turmeric powder added. If you cannot get cocoa-nut oil, use citrine ointment, rendered very soft by adding a little sweet oil, and then mixing a little turmeric powder. Two or three applications will effect a cure.

AUTUMN BROCOLI (E. Fauz).—Sow Early Purple Cape, Walcheren, and Green Cape, the first week in April. The plants will not require a hotbed. Sow on a warm border, and keep them well watered.

PEARS (Omicron).—Both the *Jersey Gladioli* and the *Jean de Witte* will do well in the situation you refer to. *Van Mon's Leon le Clerc* is a Pear in use during November and December.—H.

ANDROSACE LANUGINOSA (M. C., Dublin).—It is very pretty; a native of the Himalaya; grow it in a pot; soil, peat and sandy loam; water it carefully; and keep it in a cold frame during the winter. For a *Pencilled Hamburg Cock*, apply for particulars to some of the advertisers in our columns. List of *Verbenas* next week. *Silver Pencilled Hamburgs* and *Bolton Greys* are the same race of Poultry.

SPARROWS (S. S. S.).—Traps and a gun are your best remedies.

GRAPES (Snowdrop).—We should prefer the *Barbarossa* to the *Charlesworth Tokay* for your late vine. They are both excellent grapes. Your "flowering Gooseberry" is one of the ornamental *Ribes*, but, unless we saw a cutting of it we could not tell its specific name.

SWOLLEN FACE OF A FOWL.—"B. H. E. has in her possession a black Spanish hen, which has not laid for some time; she has an enormous swelling on one side of her face, and the eye on that side has been watering, and is still partially closed; otherwise she appears perfectly well, is lively, and eats and drinks as usual. Her face has been frequently fomented with warm milk and water, and warm camomile-tea. She has been given one Plummer's pills, and pills of Cayenne pepper, ginger, barley-meal and flour, and plenty of warm, nourishing food; the swelling has been twice opened, without improvement."—The swelling, in this case, probably arises from an accumulation of solid secretion in the cavity of the nose on the affected side. I have seen it occur in Spanish fowls more than once. If this view of the case is correct, the only remedy is a free opening below the eye, and the extraction of the secretion; but to accomplish this successfully requires some knowledge of the anatomy of the parts.—W. B. TEGETMEIER.

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EDWARD GEORGE HENDERSON AND SON

beg to inform their patrons and the public, that their CATALOGUE of SEEDS for 1854 is now ready, and will be forwarded, "post-free," on application.

E. G. H. and Son take this opportunity of informing their patrons, that none but the most popular and improved kind of Vegetable Seeds appear in their list; and among the Flower Seeds, only those whose beauty and merit is universally acknowledged; together with a careful selected stock of the principal New Varieties.

E. G. H. and Son beg respectfully to call particular attention to the following Choice Seeds of Florist Flowers, which they can confidently recommend as being selected from a Choice Collection of Named Flowers of extra merit; and also the annexed New Annuals:—

CHOICE FLORIST FLOWERS.

PER PACKET.

Antirrhinum, fine mixed, 4d
Balsam, Camellia flowered, 6d
Calceolaria, extra fine, 2s 6d & 5s
Cineraria, ditto, 1s 6d & 2s 6d
Carnation, fine, 1s 6d
Dahlia, 1s

Geranium, fancy vars., 2s 6d & 5s
Hollyhock, 1s
Pansy, 1s 6d
Petunia, 1s
Pink, 1s 6d
Mimulus, fine spotted varieties, 6d

NEW AND OTHER CHOICE FLOWERS.

PER PACKET.

Abronia umbellata, 1s 6d
Anagallis azurea grandiflora, 1s
" rubra, 1s
Arctotis breviscapa, extra fine, 6d
Aster, new dwarf German Pyramidal, in collections, 6s
Aster, new French Peony flowered, Pyramidal, in collections, 3s 6d
Balsam, new double pale yellow, 1s
" aurora, 1s
Collinsia bicolor atrorubens (new), 6d
Collinsia Bartsieifolia, 4d
Clintonia pulchella, 6d
" " atropurpurea (new), 1s
Eucnide Bartonoides, 6d
Frysinum Arkanianum (new), 1s
Grammanthes Gentianoides, 6d
" lutea, 6d
" variegata, 6d
Huncea elegans, 6d
Leptosiphon luteum (new), 1s 6d
Linum grandiflorum rubrum (new), 1s 6d
Lobelia ramosa, large blue, 4d
" alba (new), 6d
Maurandya elegans, superb, 6d
Mignionette, new large flowering, 3d
tree, 1s

Nycteria capensis, splendid (new), 1s
Nycteria selaginoides, 4d
" villosa, 4d
Nolana grandiflora alba, 4d
Ecnothera prostrata, bedding plant, 4d
Portulaca, new orange (not aurea), 6d
Portulaca, new rose, 6d
Primula sinensis fimbriata alba, 2s 6d
Primula sinensis fimbriata rubra, 2s 6d
Rhodantha Manglesii, 6d
Schizanthus Grahami carnea (new), 6d
Schizanthus retusa, 4d
" alba, 4d
Stock, Scarlet Intermediate, 6d
Stock, Pyramidal Wallflower-leaved, 6d
Stock, new large-flowered German, extra fine (in collections), 2s 6d
Tropaeolum Triomphe de Gand, 6d
Digitalis, very fine new spotted varieties, 6d
Phlox Drummondii alba oculata, 1s
" coccinea, 1s
" Leopoldiana, 6d
" alba, 6d

February, 1854.

WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

SUTTON'S GRASS SEEDS.

Extract of a letter from Dr. LINDLEY:—

"MESSRS. SUTTON.—We have already made trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years. (Signed) JOHN LINDLEY.

Horticultural Society, Regent Street, London, Nov. 9, 1853."

Messrs. Sutton are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of Seed, 1s 3d per pound, 3s per gallon, or 21s per bushel. CARRIAGE FREE, except very small quantities. The quantity required is 40lbs per acre, for forming new lawns, or from 10 to 20lbs per acre for improving old lawns.

SUTTON'S GRASS SEEDS FOR FORMING PERMANENT PASTURE, 21s to 30s per acre. SUTTON'S RENOVATING MIXTURE FOR IMPROVING OLD PASTURES, 1s per lb.

JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

CITY OF LONDON TENANTS' INVESTMENT

and FREEHOLD LAND SOCIETY.—Office, 70, King William-street, London-bridge.

PATRONS.

Alderman Sir James Duke, Bart., M.P.

The Right Hon. S. Lushington, D.C.L.

The Directors have, with much consideration for the benefit of its members, purchased a splendid and unusually eligible estate at Dulwich, Surrey.

It looks upon the Crystal Palace, Sydenham, from which it is only half-a-mile distant, has good aspect, and peculiar advantages, from a superior neighbourhood, high roads for the termination of those on the Society's estates, good frontages, building soil, excellent drainage, and abundant water of good quality.

No plot will be of less dimensions than 18 feet frontage to the road by 100 feet in depth.

The Estate presents peculiar opportunities for obtaining really serviceable plots of freehold ground, either for building or investment.

Persons desirous of becoming shareholders in Streatham and its neighbourhood may do so on application to Mr. HENRY SEYMOUR, Streatham Common, Surrey.

Plans of the Estate are now ready for distribution, price 3d, either on application to the Society's architect and surveyor, E. Habershon, Esq., 38, Bloomsbury-square, London; or to the Secretary, WILLIAM BAYNER.

Feb. 2, 1854. Secretary and Managing Director.

N.B. Deposits of £10 and upwards received, and interest at the rate of £5 per cent. per annum paid thereon, quarterly or half-yearly.

FLOWERS of all HUES.—Joseph Henry KNIGHT,

Seedsman and Florist, Battle, Sussex, begs to call the attention of the readers of THE COTTAGE GARDENER to the following Seeds, which he is now sending out, post free, in sealed packets; and being saved with the greatest care from none but the best kinds, he confidently recommends them to all who wish for real genuine Seeds of superior quality.

FLOWER SEEDS.

ANTIRRHINUM, from 70 kinds, including every shade of colour, striped, spotted, and mottled, 6d.

ASTER GERMAN, 12 varieties separate; many have been grown five inches over — 1s 6d the collection.

PANSEY, from 150 kinds, including the newest sorts, 1s.

SWEET WILLIAM, from 50 kinds, 6d.

HOLLYHOCK, from the best double flowers, 6d.

VERBENA, from 70 kinds, including the newest, 6d.

CARNATION, PICOTEE, PINK, and CALCEOLARIA, from the best show kinds, 1s each.

CHOICE ANNUAL SEEDS, in collections, including the most popular kinds, with descriptions on each packet, post free, at the following prices:—100 papers, for large Establishments, 10s 6d; 50 ditto, ditto, 6s; 30 ditto, ditto, 3s 6d. 100 papers, for smaller Establishments, 7s; 50 ditto, ditto, 4s; 30 ditto, ditto, 2s 6d; 12 ditto, ditto, 1s 2d.

IMPORTED GERMAN SEEDS.

ASTERS, 24 varieties, 2s 6d.

" 18 varieties, 2s.

STOCKS, 24 varieties, autumnal-flowering, 3s. 6d.

" 18 varieties, 2s. 6d.

" 12 varieties, 2s.

LARKSPUR, 12 varieties, dwarf, double, 2s.

ZINNIA ELEGANS, 12 varieties, 2s.

DOUBLE GERMAN WALLFLOWER, 6 varieties, 1s.

SELECT VEGETABLE SEEDS.—Post Free.

IMPROVED RIDGE CUCUMBER, particularly hardy, prolific, and of great length, 6d. per packet.

CALIFLOWER, summer, very fine, 6d. per packet.

BROCOLI, in six superior sorts, warranted true to name, and to give succession for nine months in the year, 3s. the collection.

SELECT PLANTS.

J. H. K. having a considerable portion of ground which must be cleared by the 1st of April, is induced to offer them at the annexed exceedingly low prices.

PANSIES, extra choice show kinds, named, 24 varieties, 10s.; 12 ditto, 6s.

PINKS, 12 extra choice show kinds, 4s.

PICOTEES, ditto, 6s.

The above can be sent post free where desired.

HARDY HERBACEOUS PLANTS,

50 fine-named kinds, 7s 6d; 25 ditto, 5s. Carriage free to London.

Post Office Orders payable at Battle, in Sussex.

WELLINGTONIA GIGANTEA.—Beautiful Litho-

graphed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7s 6d each, of Messrs. VEITCH & SON, Exeter; and Mr. JAMES VEITCH, Junr., Exotic Nursery, Chelsea.

The Bark, Wood, Cones, and Foliage, which were exhibited on Tuesday last, at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—Feb. 25.

"WELLINGTONIA GIGANTEA."

Messrs. VEITCH, of Exeter and Chelsea, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well-established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant ... 2 guineas. For 8 Plants ... 10 guineas.

For 4 Plants ... 6 guineas. For 12 Plants ... 12 guineas.

And all orders will be executed strictly in the rotation in which they are received.—Feb. 25.

CHOICE SEEDS.—BASS & BROWN'S NEW

SEED AND PLANT LIST is now complete, supplied free for three penny stamps.

FINE NEW PEAS of the last and present year's introduction.

Waite's Daniel O'Rourke, very early ... 5. d. 2 6 per quart

Fairbeard's Nonpareil, earlier than the Champion of England, rich flavour ... 5 0 "

Sangster's No. 1, 2 1/2 feet, very early, prolific, and fine ... 2 0 "

Stuart's Paradise, 4 feet, a very fine, large, long-podded marrow, three weeks before Thurston's Reliance, or other Peas of the same character ... 2 0 "

Hairs' Defence, 4 feet, fine, new wrinkled marrow ... 2 0 "

The three last-mentioned were grown last season by ourselves, and we can recommend each of them as an acquisition. Sangster's No. 1 and Stuart's Paradise are included in the collection below.

BASS and BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS.—The following comprise the best in cultivation, including several new sorts of first-rate quality.

No. 1.—Collection for a large garden, containing 20 quarts of Peas, in 20 best sorts, and all other Vegetable Seeds in £ s. d.

proportion, sufficient for one year's supply ... 3 0 0

No. 2.—Collection in smaller proportion ... 2 0 0

No. 3.—Collection ditto ... 1 5 0

No. 4.—Collection of choice kinds for a small garden ... 0 15 0

If any sorts of Vegetables are not wished for, enlarged quantities of others will be sent to make up the amount. Goods CARRIAGE FREE (not under 20s) to all the London Termini.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

WEEKLY CALENDAR.

M	D	W	MARCH 16—22, 1854.	WEATHER NEAR LONDON IN 1853.					Sun	Sun	Moon	Moon's	Clock	Day of
				Barometer.	Thermo.	Wind.	Rain in	Inches.						
16	Th		<i>Bembidium crucigerum.</i>	29.631—29.594	41—31	N.E.	—	—	14 a 6	4 a 6	8 23	17	9 51	75
17	F		St. Patrick.	29.890—29.829	33—22	N.E.	—	—	12	5	9 44	18	8 34	76
18	S		PRINCESS LOUISA BORN, 1848.	30.101—29.928	34—20	E.	—	—	10	7	11 8	19	8 16	77
19	SUN		3 SUNDAY IN LENT.	30.150—30.132	40—20	N.	—	—	8	9	morn.	20	7 58	78
20	M		<i>Harpalus obscurus.</i>	30.116—29.946	44—22	W.	—	—	5	10	0 33	21	7 40	79
21	Tu		Sun's declinat., 6° 13' N.	29.826—29.764	42—23	S.	01	3	12	1 54	⊕	22	7 22	80
22	W		<i>Anchomenus prasinus.</i>	29.887—29.859	42—24	N.	—	—	1	14	3 6	23	7 4	81

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 51.3° and 34.6° respectively. The greatest heat, 69°, occurred on the 19th in 1836; and the lowest cold, 16°, on the 17th in 1845. During the period 126 days were fine, and on 63 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 433.)

CARDAMINE IMPATIENS: Impatient, or Irritable Lady's Smock; Noli-me-tangere; Quick or Impatient Cress.



Description.—It is an annual. Root small, tapering. Herb

erect, slender, pale green, smooth in every part, except the *stipulas*. Stem one-and-a-half or two feet high, generally a little branched, leafy, angular, hollow, often zig-zag. Leaves of numerous opposite lance-headed leaflets, with an odd one; all equal, more or less notched, rarely entire; pale beneath. *Stipulas* lance-headed, acute, bent down, clasping the stem, all finely fringed, and evidently *stipulas*. Flowers numerous, in erect spikes, extremely small. Petals white, but very transitory, and occasionally not present. Pods erect, very slender, composing long clusters, and discharging their seeds with a crackling noise, and great force, on the slightest touch or concussion, by means of the valves rolling back suddenly. The whole plant is disagreeably bitterish and pungent.

Time of flowering.—May to June.
Places where found.—Mountain pastures by the sides of rivulets, on moist, rocky, or stony places, in the north of England.

History.—Johnson, in his edition of *Gerarde's Herbal*, speaks of this species under the title of *Sium minus impatiens*, and says that it was "kept in divers of our London gardens, and was first brought hither by that great treasurer of nature's rarities, Mr. John Tradescant. The nature of this plant is such that if you touch but the pods when the seed is ripe, though you do it never so gently, yet will the seed fly all abroad with violence, as disdaining to be touched, whence they usually called it *Noli-me-tangere*, as they, for the like quality, name the *Persicaria siliquosa*." Soon after Johnson wrote it was discovered to be a native of England, for Parkinson says it was found "in our own land." Ray, but a few years later, says it is to be observed "among the stones under the scars near Wherf, a village some three miles distant from Settle, in Yorkshire." He also states, in his "*Historia Plantarum*," that he found it near Halsted, in the spring of 1685, in a ditch by the road leading to London.—(Smith. *Withering*. Martyn. Ray. Johnson's *Gerarde*.)

THE prize-list list for the sixth great Annual Poultry Contest at Birmingham announces Tuesday, the 12th of December, and the three following days, as appointed for that Exhibition.

The Committee of Management, we doubt not, have given the fullest consideration to the expressed wishes of those numerous exhibitors who desired some curtailment in the protracted period of their fowls' confinement in Bingley Hall; and if that body now find themselves unable to grant all that has been asked, the enormous expences attending an exhibition of this magnitude must be accepted as their sole motive in declining to comply with the suggestion. We are not, however, without hope that it may be found compatible with their arrangements to close at an earlier hour on the Friday, so that the birds farthest from home may be sent off on that evening. This would, undoubtedly,

be a great boon, many pens having often previously suffered from the intervention of Sunday, and the more limited means of railway transit on that day. Additional confidence may also be felt by exhibitors from the care bestowed on the birds at the last Birmingham meeting, with regard to the feeding, and management generally. The supervision of the former department having been confided to Mr. E. Hewitt, his well-known experience and constant attention prevented the usual proportion of invalids, and very few, if, indeed, any birds, that arrived in health, left the worse for their abode under his charge. At the same time, there are many instances before us of "four days exhibitions," where these essential precautions were sadly neglected; and there are, moreover, few, if indeed any, cases where an equally liberal expenditure with that of Bingley Hall calls for the same indulgence.

The general arrangement of the classes varies from that of previous years, the *Hamburgs* now commencing the list. Convenience in assigning the birds to the situation best suited to the different classes has probably induced this alteration, since there is no appearance of an alphabetical, or other systematic classification.

The prizes for "the best cock and one pullet," formerly allotted to Dorkings and Spanish, are now withdrawn. But we are glad to notice a fourth class "*for any other variety of the Polish fowl*," thus doing away with the inconsistency of compelling the entries of birds of undoubted Polish blood among the miscellaneous fowls.

Spanish come next; then *Dorkings*, coloured and white; after these, *Shanghaes* or *Cochin-China*, in their four varieties; and these are again followed by *Brahma* *Pootra* fowls; so here the oft-disputed, and still far from settled, question of the distinctness of breed in these birds from the *Shanghae* appears to be sanctioned. We do not, however, think that fault should be found with this resolution of the Birmingham committee, though, in our opinion, a class as *Grey Shanghaes* would have better suited them, at any rate until an enumeration of proved specific distinctions had taken the place of mere vague assertion.

Game fowls are as before, as also *Malays*, and the class for *any other distinct breed*, and *Bantams*. In respect of the latter, we would have suggested, for the guidance of exhibitors, some notification with respect to the admissibility of "*booted and tufted*" specimens, to the White and Black classes, a recent decision at an important meeting rendering this desirable. *Geese* still stand as a single class, though we think they might have been divided as "*Emden*," "*Toulouse*," and "*Pied*." *Turkeys* have premiums for both old and young birds. *Ducks* have undergone no change, but *Guinea Fowls* are passed over unnoticed.

Pigeons are admirably arranged, the fancier of these birds having every inducement to exhibit without the complicated sub-divisions that oftentimes confuse this class.

The amount of the several prizes has been increased throughout—first prizes for fowls standing uniformly at £3; second at £2; and the third at £1. But might not those of the more important breeds, such as *Spanish*, comprised in a single variety, and *Dorkings* in two only, have had some increase above the *Hamburgs* and *Polish*, to each of which, in their four varieties, no less a sum than £48 is assigned, while *Dorkings* have only half this, and *Spanish* but one quarter; even less than *Bantams*? No one could have fairly objected, if in the instance of *Polish* and *Hamburgs* the prizes had been reduced a pound, and the saving carried to increase the premiums of such birds as claim greater encouragement on account of their higher character, as not merely ornamental, but likewise economical poultry.

The *Pigeon* prizes are increased from 10s. and 5s. respectively, to 15s. and 10s.

We will now proceed to notice the points in which the regulations have been altered from those of last

year. And here we find that cottagers will now compete separately, and gratuitously, with the promise of "*liberal premiums to deserving specimens*." This is assuredly well done, for it cannot be doubted, from the peculiar character of this great exhibition, such persons had the odds greatly against success under the former principle of common competition.

The clauses of two months *bona fide* ownership, of the selling price to be affixed, are both retained, but the following is a wise addition, not merely saving time to the officials, but checking any tendency to act upon information obtained after the entries are closed. "*No alteration whatever can be made in the certificates after they are received by the Secretary*."

The rate of subscription is raised to £1 for exhibitors; but the number of their pens is now limited to four, of which there may not be more than two in the same class; but "*exhibitors of Pigeons 'only'*" may enter six pens, but of these not more than two to be of the same variety. The rules by which the restrictions of the number of pens has hitherto been enforced has been so constantly evaded by the entrance of birds in the names of persons having no real *bona fide* ownership in them, that we shall be curious to observe how such infractions of the regulations will be guarded against now that the limitation has become still more stringent. A fine of three shillings will follow the omission of not sending birds that have been duly entered; had this been of even larger amount, such a penalty could not be objected to, on account of the great inconvenience that carelessness in this respect entails upon those who are entrusted with the management.

A strict rule also provides for the exclusion of all persons from Bingley Hall before the opening of the Exhibition on the Tuesday morning, those only being excepted who may be actually engaged on official business within the building.

The points have now been mentioned on which the classification of the birds, the amount of premiums, and the regulations of the present year, have undergone an alteration from those of 1853. The notification, however, that "seven silver vases, of the value of six guineas each, will be awarded, instead of money prizes, for the best pen of Pencilled *Hamburgh*, Spangled *Hamburgh*, *Polish*, *Spanish*, *Dorking*, *Cochin-China*, and *Game fowls*," betokens a degree of liberality on the part of the committee that will be generally appreciated. The competition for these vases will be open to both the adult and the chicken classes in each of the above breeds.

Had space been at command for a class of single cock birds of the different families of any age, one great object of Poultry Societies, the attainment of stud birds of the highest excellence, would have been still more readily attained; but, while saying this, we are not forgetful of the reasons that probably forbade its institution, for every inch of even the extensive area of Bingley Hall has, doubtless, many claimants for its occupation.

Though in some few particulars now alluded to possible improvements in this prize-list have occurred to us, we most gladly recognise its general excellence, and the obligations of the poultry-keeping community to those gentlemen who have carried the Birmingham Society through the many difficulties of its earlier years to its present unexampled prosperity and influence.

NEXT in our list of PEAS comes

FAIRBEARD'S SURPRISE.

Synonymes.—*Surprise, Early Surprise.*

This variety, and the *Champion of England*, were raised from two peas found in the same pod; the former being round, and the latter wrinkled. They were selected by Mr. William Fairbeard, of Green-street, near Sittingbourne, from a crop of *Dwarf White Knight's Marrows*, a plant of which having exhibited a more than usual early character.

The *Surprise* is a very excellent early Marrow Pea, somewhat earlier than *Champion of England*, but not more so than a day or two, at most. The plant is of a free but not robust habit of growth, and always with a simple stem, which is about five feet high. The pods are produced at every joint, beginning at about three feet from the ground, and number from eight to ten on each plant. They are generally single, but sometimes in pairs from three-and-a-quarter to three-and-a-half inches long, and three-quarters-of-an-inch broad, slightly curved, but not quite so much so as *Champion of England*, and *Champion of Paris*. They contain from seven to eight peas in each, which are of a good size, but not so sweet as those of *Champion of England*. The ripe seed is somewhat oval, and of a pale olive-green colour.

The seed was sown on the 5th of April, and the plants bloomed on the 15th of June. On the 21st the blooms dropped, and the slats appeared, and on the 9th of July the pods were quite filled. At first the pods are so flat as to give the idea that the peas are not sufficiently grown, but notwithstanding this appearance they are quite fit to be gathered.

Though an excellent Pea the *Surprise* is one which may easily be dispensed with. If there was no *Champion of England*, then we might retain the *Surprise*; but I give the preference to the former.

FAIRBEARD'S CHAMPION OF ENGLAND.

When I first saw the *Champion of England* Pea, the

whole stock consisted of a few rows in the nursery ground of Mr. Fairbeard. It was on the second day of June, about eleven years ago, and I well remember the interest with which I viewed a wrinkled Marrow Pea ready to gather so early in the season. As I have stated already, this and the *Surprise* both came from the same pod, the produce of a plant found in a crop of the *Dwarf White Knight's Marrows*. The best indication of the superiority of this variety is the rapid progress of its popularity, and the universality of its cultivation. It belongs to the class called "*Knight's*" or *Wrinkled Marrows*, and is, without doubt, one of the most valuable acquisitions which have been obtained for many years.

The plant is of a strong and luxuriant habit of growth, with a stem from six to seven feet high, which is often simple, but also very frequently branching; the laterals are produced within about eighteen inches of the ground, and sometimes assume as vigorous a growth, and attain as great a height as the main stem. They produce pods at the first joint above the lateral, and are

continued at every succeeding joint to the greatest extremity of the plant, amounting in all to from twelve to nineteen pods. The pods are generally single, but very frequently in pairs, from three-inches-and-a-quarter to three-inches-and-three-quarters long, three-quarters-of-an-inch broad, slightly curved, and terminated abruptly at the point. When they begin to fill they are rather flat, but soon become more narrow and round; the surface is quite smooth, and the colour light green, till they begin to ripen off, and then they become paler and shrivelled. They contain from seven to nine very large peas, which are very closely packed and compressed, over half-an-inch long, nine-twentieths broad, and seven-twentieths thick. The ripe seed is wrinkled, [and of a pale olive-green colour. The seed was sown on the 5th of April, and the plants were in bloom on the 14th of June. On the 20th the blooms began to fall, and on the 10th of July the crop was fit to be gathered. It is very prolific.

R. H.

(To be continued.)

SEASONABLE NOTES.

LET me again remind our readers of the importance of *retarding the blossoms of Fruit-trees*. I am quite aware that it is too late to talk of this as to some kinds, but not as to all. The fact is, such a host of important matters press at this season on the mind of those who undertake to teach the unknowing in gardening matters, that they are puzzled to know what to select. Our

readers, however, need never be at a loss, for a reference to back volumes will soon set them right, be the case what it may. The basis of this retardation principle, which I was the earliest to get recognised by some of our first-rate men, stands thus:—every week we advance into the Spring as to the unfolding of the blossoms, the air becomes progressively milder, and any recurrence to frost of necessity assumes a moderated or qualified character, through the warmth of the soil, walls, or, indeed, any contiguous body. I urge this as certain on general principles; it is of no use telling me of exceptions. Many people allow themselves so to be terrified by these that they never carry out anything by system, but squander away their time in indecision. Verily, the world at large must appear a chaos to such characters.

The foregoing is not all as to the setting of the blossoms; the ground warmth at the roots is a most important consideration. I hope, that by this time most of our readers recognise the propriety of endeavouring to enlist the action of the root whilst the development of the foliage is taking place; and are aware that all our best forcing gardeners instantly aim at this as the fundamental principle in forcing. Indeed, common sense alone will point to the propriety of sustaining, as far as possible, a reciprocal action between root and branch; and it must be remembered, as to our fruit-trees from warmer climes, that in all probability the soil in many of those climates never becomes so low, in relation to atmospheric warmth, as in Britain; in the ordinary phraseology of gardeners,—those climates possess more “bottom heat.”

Such being admitted, it will also be readily conceded, that if by any kind of handy-work we can arrest the development of the blossoms and foliage, whilst the soil where the roots are situated is advancing several degrees in temperature, through the steadily advancing character of spring temperature, we are gaining the point most favourable both to a hearty and unchecked development of the foliage, as well as increasing the chances for a crop of fruit.

I will now take it for granted that these doctrines are sufficiently sound to recommend themselves to our readers; and I may just point to a practical application of the principle, or, at least, show forth my own practice in this respect. It is very simple where canvass can be applied; it consists merely in reversing the protective principles, *viz.*, in warding off all sudden excitement through sunshine during the day, and in exposing the trees to the night air, to cold winds, &c. One caution alone is necessary here—when the trees actually begin to unfold their buds the retardation principle must gradually merge into the protecting principle, and this will consist in avoiding severe night frosts and cutting winds. Where, however, people are obliged to use fir, or other boughs, for protection or retardation, the case differs considerably. Here they are not capable of adaptation to emergencies, but once stuck in they must remain for weal or woe; any attempt to cover and uncover through these things would seriously affect the latter question, which, indeed, is likely to become the most serious question of the day.

Next, let me remind our readers of the propriety of looking sharp after the eggs of that pest of the Apricot, the *Red-bar Moth*. I may again state that the eggs adhere to the principal branches as though pasted on, and are of an oval character, like a large parsnip seed dotted over. These will begin to hatch by the time the foliage is unfolded, and their ravages soon become manifest, for each little rogue of a caterpillar selects a group of leaves connected with the spurs of the future year, and making up his mind to have comfortable quarters for many weeks, he rolls them instinctively round his person, and thus provided with a canopy which bids defiance to rains, &c., he sallies forth at the command

of his voracious appetite on marauding expeditions. In no case is the old adage, “a stitch in time,” better verified than in the destruction of these eggs; it needs but a sharp eye and a good thumb nail, and they are annihilated; the gelatinous issue from their ruins will pretty obviously attest to the amount of vitality in this apparent patch of dry paste.

Come we next, in this wandering paper, to the *Peach-trees*, now, of course, pruned and trained, and I hope my presumption may be pardoned if I turn catechist for a moment. Have you dressed your wall or your trees, I would ask? Again let me repeat that such a course is indispensable. The best time, as I think, to perform this, is the moment the trees are nailed or trained; and I find it the simplest and most certain course to apply the mixture with a half-sized painter’s “dusting brush.” The following is my favourite mixture, but, doubtless, other practical gardeners have recipes, differing, of course, it may be, but, perhaps, as efficient: this is, to repeat the matter,—soft soap, four ounces to a gallon; sulphur, six handfuls; and as much thick clay water as will make the whole into a regular paint; this applied between every two branches, in fact, to every naked portion of the wall. With this application the red spider has never proved of any particular moment to me, although I have occasionally been honoured with visits from him. I prefer this before any other doctoring, for, indeed, as the summer advances, we generally find enough to do in disbudding, stopping, and the other minutiae, which ought to be had recourse to.

I may here advert to a novel mode of *protecting bush-fruit* from the attacks of birds. It is well-known by Gooseberry-growers that the Finch family, Tomits, and others, are particularly partial to the buds of Gooseberries, Cherries, &c., when in the act of germination, or in what, perhaps, may be termed a *malting* condition. So great are their ravages at times, that I have known most of the bushes in a given garden three-parts destroyed by them,—for it is not only the loss of the season’s crop that we have to lament, this severe disbudding process breaks-up the very constitution of the tree; and all that is needed to complete its utter destruction is a visitation from the caterpillars and red spider subsequently. Some people hang strings or threads over their bushes; some suspend fragments of glass, in pairs, to tinkle with every puff of wind, like an Æolian harp; others run the string through potatoes at given distances, and stick feathers in the potatoes to represent hobgoblin birds, &c. It is pretty-well known that they do not care a fig for either after the novelty has passed, which is in about three days, for they may be seen to alight on the very strings; and as for the music, I am not sure but it soon proves attractive.

After a very hard winter these birds are most voracious; I suppose, in consequence of the great destruction which ensues amongst other kinds of food to which they are attached; and the Gooseberry-grower may always look sharp out in the beginning of February.

It has often occurred to me that much might be done in preventing the *ravages of insects, birds, &c.*, by using some application that would render the taste of the object to be protected nauseous to the marauder’s palate; and that such, if in a fluid state, might be most economically applied—as to labour—by the syringe. With this view, as soon as I found war was declared by the birds against the Gooseberry buds, I cleared out a reservoir holding nearly an hundred gallons, and commenced brewing, although neither March nor October. The materials and proportions were about as follows:—Soft soap, two ounces to a gallon of warm water, well beat; two quarts of soot, added to the above, with three handfuls of flower of sulphur, and as much clay mud, well strained, as would make the whole into

as thick a mixture as could be delivered by the syringe without clogging it. The whole being kept stirred, one man took a couple of pots full, and the syringe, and a second took a vessel full of fine fresh slacked lime, quite cooled down. The syringe-man having well battered his tree, the lime-man powdered heavily on the heels of it, until the whole was as white as lime could make it. And now, I may at once say, that out of a hundred bushes done this way, not a bud has been taken since, as far as we can discover; and I consider the invention ought to be placed on a par with the famous recipe of the famous Forsyth, and to be a fitting matter for the consideration of our Parliament; who, however, I much fear are too busy to think about Gooseberries.

But jesting apart, let me advise cottagers and others to try it in another year; for my part, I think I shall always do it before a bud is taken. Let me here remind our friends of the propriety of our annual top or surface-dressing, to Gooseberries and Black Currants especially, be it ever so little. By these means, surface fibres are constantly added, and the injurious effects of drought prevented; old thatch, rotting litter, leaves and a little manure blended, will accomplish the thing. We have proved the practice for many years. R. ERRINGTON.

WHAT SHOULD AND SHOULD NOT BE DONE IN THE SPRING.

If I were to say that we should take sufficient time to do everything in the right way, and that we should not hurry over anything we did in the spring, it would justify this heading of my letter; but I must go farther, although I cannot name one-tenth of the jobs that press for immediate attention, nor restrain the fast doers, who care not how the world goes round, provided they get every job through hand as fast as anything, no matter how *scamping* the work is got over, if you can put a plain surface on it for the time.

I was coming down the road, one day last week, and met a gentleman,—a great gardener, not far off,—and he asked my opinion on pruning some *Hybrid Perpetual Roses* that were planted last January, and also about some *Rhododendrons* which were planted five years since. These were old plants when he had them, and they were very bare at the time; but he was told they would soon take on in his new garden. New gardens, new brooms, and new dresses, do wonders, now and then, but not always! at least, all the time this garden was new these *Rhododendrons* took on nothing but barefacedness. After seeing there were no flower-buds of any account on these plants, I advised to have them cut down about the end of April; there are lots of sucker-like shoots, young enough and healthy enough, at the bottom of all the bushes, and that is a sign that the bare branches got too dry and hard to let up the sap, rather than any unhealthiness in the roots to hinder their part, and on that account I ordered all the branches, young and old, to be cut down to near the bottom sucker-like shoots, which are only from six to ten inches long, and I mention this to show a reason for an opposite course, which is given to-day in the part for the private correspondence, and also to let a cat out of the bag, where the poor thing has been for a long time.

If there were no shoots coming from the collar of these bare *Rhododendrons*, and that the tops looked green and healthy enough, one would conclude the bareness was caused by the plants being too close together at a former period, that the roots were all right, and that the bare part of the branches did not get into that hind-bound state which nothing cures so soon as cutting right down to the bottom; then there is no

fault in any of the parts, and it seems a pity that a plant without any fault at all should be cut down to the ground; no gardener of any note would do such a thing till he tried and failed with all the plans he could think of—so the healthy, but bare, *Rhododendrons* were ordered to be cut down to different heights, from five feet to within eighteen inches of the ground, they standing just now full seven feet high. But the puzzle is, why do they advise to have all the small shoots cut-in so many inches about the beginning of April, while the large branches are not to be touched till the second week in May, or to a later period, if they are worth keeping till they are getting out of bloom? The puzzle is no puzzle to gardeners, however; at least, not to some of them, for it is on the right application of the rule, or principle, which concerns this puzzle, or no puzzle, that one gardener excels another who has more advantages; and the rule runs through every branch of gardening in which plants are concerned, and yet no one writes about it; but the best way to break the ice about it is first to mention an opposite rule.

Early next June, if all is well, Mr Errington will put us all in mind of stopping the breastwood on wall-trees at such and such lengths; and, to do that as it ought to be done, he will be very particular in advising to have the top part of the trees, and all the "robbers" in any part of the trees, stopped first; in nine or ten days after that, he would have us go over the trees again, and stop the next strongest shoots, leaving the small fry and those about the bottom for some ten days longer; and the reason he gives is as good as the rule, that the small shoots may receive extra help from the supply which has been stopped higher up. Before his own vigorous growth stopped—I mean the growth of his body and limbs—they used to summer-prune all parts of a wall-tree the same day; but that made bad worse, the strongest shoots would push stronger than before, and the little ones got weaker and weaker every season, and when they came to the worst, people began to improve their ways, by stopping the supplies gradually, and what the strong lost the weak gained, and the more they gained, the fewer you could see of the very strong. Thousands of plants, besides fruit-trees, go through this style, or rule, of pruning every season; every strong shoot which is stopped during a summer's growth comes under the rule; and here, the rule of thumb is right after all—the finger-and-thumb-pruning during a growth being of the very best kind.

Now, what would half the world say if one were to recommend exactly the opposite way of pruning? To begin first to cut the smallest twigs on a tree, or bush; next, the intermediate ones; and, last of all, the very strongest? Why, without giving it a thought, they might reasonably say, that would be worse than no pruning at all; but just think over it awhile, and, if I mistake not, I shall prove to you, and all the rest of them, that this side of the question is the right one, nevertheless; and showing the opposite rule, in the case of fruit-trees, will enable me now to make you understand my meaning. I do not say that two rules can both be best; but each rule, though the very opposite to the other, is best in its own season; the first rule is the best in all summer-pruning with all plants; and the second is just as good, and fully as much called for in winter-pruning; yet we seldom think on this, and never write about it; therefore it was necessary that some one should make a direct experiment, to prove this winter rule, before the whole body should be asked to put faith in it on the authority of any one, and having little else to do, I thought I might try the experiment first. I have done so, and it is as clear as anything, and of universal application.

Against the west end of a retired cottage, on the

banks of the Thames, grows a beautiful plant of the Rose *Blairii*, No. 2. It was planted in 1841, or 1842, and now reaches fifteen feet high, and spreads accordingly. I received full permission to do with that Rose, and other strong climbers, just as I chose. Well, in November, I pruned all the young small wood along the bottom of this Rose to one inch, and I saw, that if I pruned the rest that day not one out of ten of these hard one-inch pieces would ever push again. I should have the old story of *Blairii* and bare bottom over again, and of that there was enough already. I went home, and never saw that Rose again till the middle of February, when I made a second turn at pruning, by cutting the second sized shoots all over the plant; these were cut to different lengths, of from six inches to two feet, and a few a little longer, where there were open places on the wall to cover; by this time, most of the top shoots, and the strongest, were nearly opening the top buds, and the little inch spurs I left in November as hard as an old bone had buds on them that I could just perceive, and no more, so I went off again without cutting any of the strong shoots. I left them to the first week in April, when everyone of them was more or less in leaf; the buds on the inch pieces had made some progress also in the meantime, and the buds on the shoots which were pruned in February were getting full also; now was the turn for shortening the strong shoots, and you would be surprised to see how few of the buds below half their lengths were swollen. All, except the last six or seven buds near the top of each shoot, seemed not to feel the influence of the season yet, and when I cut them to different lengths, taking away all the forward buds, what buds I left on those strong, luxuriant shoots were not then nearly so forward as those on the little spurs at the bottom of the wall, and some of the buds on the intermediate shoots were actually in leaf some days before the very top buds on the plant.

If you understand the force and value of having the buds on the weak lower branches as forward in the spring as those at the top of the tree, be it Rose, or Apple, Pomegranate, or *Polycarpus*, if there is such a tree, you will agree with me what shoots of a tree ought to be pruned in the spring, and which ought not to be pruned in the spring; also what trees and bushes ought to be pruned in just now, and what bushes, and trees, and plants ought never to be left unpruned till the spring. A weak, scurvy, scrofulous, or puny scrub of a tree, whether a Rose, Ribes, or Rosemary, whether for fruit, flower, or fume, should never be left unpruned after the middle of November in each year of its sickly life, and if pruned six weeks earlier than that the sickness is the more likely to vanish. A young, healthy, vigorous-growing tree or bush, ditto, ditto; or an old one which threatens to run out of bounds, ought not, on any account, to be pruned till late in the spring; never in the autumn; and as almost all trees exhibit parts that are neither strong, vigorous, or thriving, as did that very strong *Blairii*, No. 2, it follows as naturally as day follows the night, that there are very few trees indeed, within the garden, which ought to be pruned all over the same day, or the same week or month. In short, to keep in keeping with my text, I hold it to be sound philosophy to prune parts of a tree in the spring; and I affirm it as bad practice to leave the weak parts of a tree unpruned till the spring; and this rule or law holds good through the whole kingdom of trees and bushes, and through many of the smaller states lower in the scale; as, for instance, take a good specimen of a Scarlet Geranium, from which you wish to make cuttings just now, and if you understand the drift of my argument, does it stand to reason that you can improve it in shape, or equalise the strength, by taking off all the

tops, weak and strong, the same day or the same week. All the shoots are on the move now, and the strong ones will burst into new growth after cutting much sooner than the little shoots, and so sure as they do, the little ones will have a still less share of the rising sap, and besides being little, as they are, they will get crippled into the bargain, and die at last, if you do not cut them off by way of saving appearances.

It was only the other week that we had a new Geranium with two weak shoots and a strong one; this strong one flowered, and cuttings were made from the other two till we had them stumped nearly to the quick, six weeks before the strong one was out of flower, and cut down in its turn. Now nobody could tell, next August, if the whole three were not cut the same morning. You may very naturally inquire now, if that be so, how is it that they do not cut the large Geraniums which we see at the shows on the same plan, which they never do. There is no trouble in telling that. Nothing is so plain as *their* reason. Their plants, and all plants, never have all the shoots of the same size or strength—this is how they do it; they cut the smallest shoots much lower down than the strong ones, and they allow of only one, or, at most, two new branches to come from the bottom of the little ones, the rest are rubbed off; but on the bottom of the big shoots they allow five or six new shoots to come; then it is just like all the world over—a strong man will find as much difficulty in fighting against five ordinary men, or in providing for their keep, as a little man with narrow shoulders would find in pushing against, or in favour of, one or two; so it comes to the same thing, at last, with many trees and flowers, but never with Roses and most trees which require much looking after.

ROSE-CUTTINGS IN THE OPEN AIR.

The A B C of striking Rose-cuttings in the spring is to get forward little shoots, or, at least, short ones in a forward state of bud, and even if the top bud is in leaf it is all the better; this soft top is cut off very carefully, but not to the old wood; the rest of the swollen buds are broken off also, and what is left round the bottom of the broken buds may not be seen, but, rest assured, there are many little buds round most of them, and they will come in their turn. I could not see a single bud on the little spurs I left on *Blairii* when I pruned in November; but I could more than see them in February—I could then feel them; then you see, that by pruning off swollen buds of Roses in the spring you put the cuttings back, as it were, to November; and yet they are full of spring sap, and this sap must go somewhere, up or down; part of it will go down and make roots if the cutting is in a right way, and part will go to push the invisible buds into daylight. The cuttings are put into small pots, and close round the side in a firm compost of half sand and any light earth that comes in the way; the pots are plunged to keep them moist, for that is all that Rose-cuttings require in the spring. If they were put into sand, or soil, without pots, they would be either too wet or too dry, and when a Rose-cutting is full of spring sap, the least dampness will kill it in three days; if it is too dry it soon shrivels, so that there is a good deal of nicety about the thing, and may fail with them for awhile, till they get into the right way. But is it not the same in everything else? Who could make books-and-eyes for a dress at the first start? And the man who makes the needles could no more hem a silk handkerchief than I could, on the first or second trial. It is so with cuttings, and particularly so with cuttings of Roses in the open air at this season; but that they can be done is beyond all question. They must not have too much rain, even in pots, or too much sun, or too much easterly winds. When they are well-rooted by the end of May, they must be turned out of the pots

for the season, without disturbing the balls, into little holes in the border, which must be filled all round with as rich and light compost as one can make, and in October they are fit to be taken up and done anything with.

COTONEASTER MICROPHYLLA.

WHAT a pity that nobody takes this plant in hand to grow it in the right way; or, at any rate, to train it in a way that it would tell so much better than trailing along on the ground. It will come from cuttings of one-year wood if they are put in any week in the year, and one can always take them with heels. This month and to the 1st of May is a very good time to put them in. They will root in any light garden soil, which ought to be pressed hard round them. It does not matter much whether the bottom leaves are rubbed off or not, but, as it does not look workman-like to put leaves in the ground with any sort of cutting, we had better say, rub off the bottom leaves for a couple of inches, and press the earth hard to them. Cuttings of any length will do, and three inches is the right depth to put them in the ground, and other three inches out of the ground is the right length above. Then, if your cuttings are just six inches long, you are right, and, if longer, cut the tops to that length. If you can get a shady place for them they will hardly ever want water. Next winter or spring they will be rooted enough for moving anywhere. They make a beautiful hedge in a geometric garden, planted six or nine inches apart in this young state, or a foot from plant to plant if they are bigger; and the way to train is to put a row of pegs in the ground, along the line, about ten or twelve inches apart, and a foot high out of the ground; the branches are then trained or wattled in and out between the sticks, as close as if you were making a hamper—this is to get a body for the hedge. Every other year you must put in longer and longer sticks, to get up to what height you want the hedge to be, and each season you wattle the shoots as before, and also cut-in the side-shoots from the bottom, on both sides. The hedge should be about a foot thick, and square on the top, or it may be sharp, like the ridge of a house. Nothing makes a neater or more architectural looking hedge than this plant; and with its red berries in winter, it looks as gay as a bed of *Skimmia japonica*.

Another most ornamental way of using this plant is, to make choice of an old plant, which has stood many years in the border, or rock-work, and to cut this plant down to the ground about the middle of April, not leaving one morsel of it above the ground. The strong roots will soon throw up a bunch of shoots, like a stool of Raspberries, and quite in a different way to the old plant—more like a young Oak or pollard Willow cut down in the spring. Choose five or six of the strongest of these, and cut back the rest, put in a stake, five feet long, and train up the shoots to it, just like a pillar Rose, and you never saw such a pretty pillar-plant in your life. I know one which is fifteen feet high, or might be, but the pole is only ten feet, and the shoots hang down from the top most gracefully. The sides of the pillar should not be pruned in too close, the more feathery it is the more graceful, and the more berries; but cut back all suckers for a good handsome pillar.

It is also a good wall plant if you once get it to run up; and by pruning it so as to have horizontal side branches, like a Pear-tree, it looks uncommonly well.

D. BEATON.

COMPARING NOTES.

SMALL GREENHOUSES ATTACHED TO DWELLING-HOUSES.

It is now getting on for two years since I had the last

gossip with Mr. Beaton. At that period he had been enclosing part, at least, of the back yards of some new houses with a roof of sheet glass, so as to give the tenants the convenience of shelter, and the luxury of a conservatory at command, a very fair per centage of additional rent being expected for the outlay. In suburban districts, and small country towns, the system, if more generally adopted, would, I believe, be profitable to landlords, and a source of great pleasure to tenants, and few, if any, could better than our friend give the subject such an importance and notice as to command attention. At that period he had also been visiting some sawing establishment at Brentford, where sash-bars, &c., were prepared with something like lightning rapidity. As a vast number of questions respecting the cost of small houses are continually put, which these, like myself, living in the country are unable suitably to answer, locality and circumstances, as to materials and carriage making such a difference, it might be interesting to know for what good greenhouses, lean-to's, and detached, of various small sizes, could be built for, using the best material of all kinds, and everything well finished; and what the difference would be with inferior glass, &c. Many have quite scouted the idea of a five pound greenhouse, an account of which appeared in THE COTTAGE GARDENER some time ago, but they forget that the whole materials were of the commonest description, and the most of the work superintended, if not done, by the owner. If it would be desirable to give more definite information on this subject, our metropolitan coadjutors would be the most suitable persons to supply it.

The other day I was in one of a whole row of miniature greenhouses which interested me very much. A few weeks previously, when coming out of a merchant's house, in the same market-town, I was accosted by a young lawyer, who wanted to know a great deal about the treatment of an Orange-plant. Questions on his side were so met by the activity of the inquisitive bump on mine, as to the position and the circumstances of this Orange-plant, until the discovery was made that it belonged to a young lady, who prized it highly, and that she kept it in her greenhouse. On one thing he was wholly deficient in information—he knew nothing of the heating of the house, and yet he knew that the severe frost had hurt none of the plants. I was just at the point of passing a joke about the consultation fee, when the thought that there might be a hidden mystery about orange-blossoms kept me silent. The knowledge of an additional plant-house, however small, was to me interesting, as I thought I pretty well knew something of all the plant-houses in the town. But in this I had reached conclusions without a due knowledge of the facts and premises.

A great deal of building has lately been going on, and the house in which I was the other day was one of a considerable number facing a continuation of a new street, built by and belonging to one landlord, and all uniform. The houses are small, and, in every sense, self-contained; the yards or gardens being all distinct and divided from each other; they are two stories in height, I forget whether with or without attics. On entering the street-door, the passage takes you past the doors of of the front and back parlour, and rounding the staircase into the kitchen; this is a separate building, joined to, and about half the width of, the main house; but the gable end, containing the fire-place and chimney, standing at right angles with it. Keeping this in view, it will at once be seen, that between the kitchen of one house and the kitchen-wall of the next a space opposite the window of the back parlour would be left of something like eight feet by fourteen. This window has been changed into folding glass doors, the space is roofed with glass, and a glass door and end lets you out

into the neat little garden. There is a door, of course, in the kitchen for the same purpose.

In the small house in which I was the other day (March 6), there was a narrow walk from the parlour, down its centre, to the door in the end, with a neat border on each side. Mignonette had been growing in these borders all the winter, and was nice and green, but did not flower very well, owing, as I suggested, to a want of air, and to being such a distance in the dark months from the glass roof. Several strong Geraniums, of the *Giant Scarlet*, were growing vigorously against the wall. Fuchsias, and variegated Geraniums, were quite healthy in the borders; a Passion-flower was green and flourishing, and growing vigorously against the wall; and two Vines were just bursting their buds. The intelligent owner said, they never thought about the frost, though he regarded all with that zest which the enthusiasm of tending plants and flowers with our own hands alone can inspire. The situation of the kitchen chimney, in the centre of one of the boundary walls of this miniature house, had kept the frost entirely out during the late cold weather. In hot weather there are plenty of means for admitting air, by sliding one or both of the sashes, as far as I understood, and opening the end door. I found out that the owner of the Orange-plant referred to lived in one of these houses. I have been thus minute in the description of this block of houses, as these miniature greenhouses would cost but a small sum in making, or keeping, and would be much coveted by all who could spare a few hours from the hurry and bustle of business.

A few hints and remarks may be added in conclusion.

1. From adopting such a plan for small houses, all the bother of *heating* is avoided; if the houses were *wider*, it is questionable if the chimney from the kitchen would be sufficient. Even in cold nights, when a little clear fire was kept in the grate on retiring for the night, a damper placed in the chimney so as to allow a small opening, to prevent the air of the room being contaminated, would prevent the heat freely escaping at the top.

2. The house having light admitted merely at the roof and the end, low plants on the border will not thrive nearly so well as those more elevated to within three feet or so of the glass, either by means of small stages, baskets, or vases.

3. Tall standards of such things as Tea Roses, Fuchsias, Scarlet Geraniums, *Salvia splendens*, &c., would make an interesting appearance, allowing their heads to occupy the most of the space above the head-room next the parlour door.

4. Vines would require to be taken up the wall, and then trained, either longitudinally or cross-wise, about fifteen inches from the glass, but if allowed to monopolise the roof the room would be made too dark. Blue and purple Passion-flowers, suspended in festoons from arches, would also have a very pleasing appearance.

5. Camellias and Oranges would also do well, either as tall plants, or as trained over and covering the walls. The greatest part of the *Cactus* tribe would also answer well. How nice, for instance, would *Speciosa Jenkinsii*, &c., do on one wall, and *Speciosissima* and its varieties on another; while strong shoots at the top could be grafted with *Malleonii*, *flagelliformis*, &c., and look nice dangling from the roof.

6. One thing necessary to success would be the *aspect*. North should be entirely avoided; it would only be fitted for Mosses, Ferns, and keeping plants, bought in bloom from a nurseryman. The south, south-east, and south-west would be the best, but we would not throw cold water altogether on either *east* or *west*.

7. The modes of planting and managing such places would be endless, and the greater the variety not in one place, but each different, the better. The peculiar circumstances of large cities, in which a man knows no

more of his next-door neighbour than if he lived in the wilds of Australia, has not yet thoroughly penetrated our country market-towns, though there be a tendency in this direction from every great increase of houses and inhabitants. There is still a considerable spice of neighbourly feeling, and a desire to cultivate the social virtues. Any apparent want of this proceeds not so much from any inherent feeling of exclusiveness as the want of a good excuse for breaking in upon the privacy of our neighbours. Now, what a fine opportunity do these miniature greenhouses, furnished differently, afford for breaking in upon the icy coldness of a genteel, stilted reserve. I, myself, have often got into kind, sympathetic speaking terms, by going to see and expressing admiration of a plant in a window. Well, on my word, there goes Mrs. Prudence, having summoned up courage to knock at the door of Mrs. Thrifty!! A distant nod was all their previous recognitions! "I have ventured to ask the favour to see your beautiful Camellias." "O, most welcome; most welcome;" and away the ladies go, talking about flowers, as *only ladies can talk*, feeling a stronger and stronger mesmeric sympathy getting hold of them reciprocally; and if the interview does not actually end in sipping together the "cheering cup that not inebriates," Mrs. Thrifty has received and promised to act on the invitation, by-and-by, to see the splendid Fuchsias of Mrs. Prudence, and so the kindly, social feeling, based on intelligent perceptions of the beautiful in vegetable nature, spreads from one house to another. I know nothing of the builder or owner of the block of houses referred to; but I believe the idea will be successful, whether viewed in its remunerative, ameliorative, or pleasure-imparting aspects. R. FISH.

THE ANTIRRHINUM.

(Continued from page 442.)

Cuttings in Pots.—As I have said that Antirrhinums should be exhibited in pots, it is but right that I should describe the way they ought to be grown so as to show them off to the best advantage.

Soil.—The first thing to provide is the soil. Whoever grows florists' flowers will be always on the look-out for good loam, and I need scarcely maintain that the best is the turf from an upland pasture, taken off about two or three inches thick, carted home, and laid up on a heap for a year, to cause the grass roots to decay and mellow the soil. If this heap is chopped and turned over four or five times during the year, it will be sweeter, and better pulverised, and in finer condition for use. Of this loam take three parts, and of well-decomposed leaf-mould one part, and sandy-peat one part. If the grower has no leaf-mould he may use the same quantity of hotbed manure, but in that case it must be exceedingly well decomposed, in fact, reduced to a fine black mould. Taking into consideration that the Antirrhinum grows well on old brick-walls, a small portion of old lime rubbish, slightly sifted, will be of service to the plants mixed amongst the compost. All these matters being duly prepared in sufficient quantity, let them be brought under shelter to dry some time before the potting season.

Pots.—The second article to provide is the right sized pots. I have grown and bloomed them very tolerably in what are called large 48's, which are 5½-inches diameter; but for exhibition purposes, or to grow them finely for private pleasure, they ought to be planted in 8-inch pots; and as these plants have strong roots that run deep into the earth, the pots should be of the deepest size made.

Potting.—The proper time for this operation is early in March. The plants should be then just beginning to push up three or four strong shoots from the base of

the plants. These must be taken great care of, for they are to produce the flower spikes. Drain a pot well, and place a little moss upon the drainage to prevent the soil from choking it up, then fill the pot high enough for the ball of the plant to be nearly level with the rim of the pot. Turn the plant out of its present pot, and remove the old drainage carefully out from amongst the roots. Open these out without breaking them, and work the fresh soil amongst them. Fill the soil up round the ball level with the rim, covering the ball about a-quarter-of-an-inch, then shake the soil down by striking the pot smartly on the bench, and the potting of one is finished. Proceed thus with all the rest, and when all are finished give a good watering, and place them in a cool pit or frame. Protect them from severe frosts by a covering of mats or some other material that will keep it off, but open the frames every day, as early as the weather will permit to keep them cool. This is a grand point; for if they are drawn up into weak growth there will be no fine bloom. Should any of the plants produce one or two strong shoots, these ought to be stopped, to cause them to produce more shoots. Every plant should have at least five shoots for bloom. When these strong shoots have made some progress, and have a fair proportion of leaves, then all the small, weak shoots should be cut clean off. They make the very best cuttings.

After-culture.—As the plants grow they must be well supplied with water, and when the pots are filled with roots a weak solution of dung-water will be serviceable. The great thing to aim at, is to produce a strong, healthy, bushy plant before the flower-spikes appear. It may be necessary, where the shoots of any variety are weak, to place small green sticks to support them, or prevent the wind from breaking them; though I abominate sticks, and would never use them, except in cases of necessity. It might happen that some varieties cluster their shoots together, and, in such a case, sticks must be used in an early stage—place a stick to each shoot to spread them out, leaving the tallest in the centre.

As the season advances the plants should be placed in the open air, on a bed of coal ashes, in a situation sheltered from the wind. Just before the blooms begin to open cover the plants with an awning of canvass to shelter them from the sun and heavy rains. To produce a number of fine blossoms at once, nip off the very tip of each spike whilst they are growing. This will encourage the blooms greatly, and bring out a greater number of fine blossoms at once, and thereby ensure a finer exhibition.

No flower will travel better, when in bloom, than the Antirrhinum, yet, when the distance they have to be conveyed is considerable, it will be safer to place a stick to each spike, placing them at such a distance that the blooms will not rub against or touch each other. They should be packed in a box, and each pot secured so that it cannot move, space being allowed between each so that the plants do not touch each other. The front of the box should open, and the plants then can be taken out easily and safely. Any country carpenter may make such a box easily. When the plants reach the place of exhibition, take them carefully out of the box, remove all unnecessary sticks, and trim off any bruised leaves or flowers, and, if necessary, give them a little water to keep them fresh through the time of the exhibition. They must then be left to receive the adjudgment of the censors. I can confidently predict, that whoever will bestow all the above-described attention will be agreeably surprized with the fine appearance the Antirrhinums will make.

T. APPLEBY.

(To be continued.)

SCRAPS FROM MY NOTE BOOK.

HEATON PARK is near Manchester, and the seat of Earl Wilton. This place, though within the reach of the smoke of the great cotton factories of that town, always exhibits marks of good gardening. I visited it during the great snow storm in January, and found due preparations for producing early crops of forced fruits. The *Cherries*, especially, were promising, being full of blossom-buds; and to prevent, or rather destroy, the red spider and the black aphides, Mr. Shuter had painted all his Cherry-trees with lime-wash, and said he always made that a practice, with complete success. In the *Pine-pits* I observed several fine fruit of the variety *Black Prince*. This was raised, I believe, by J. Entwistle, Esq., at his place near Rochdale. It is a noble fruit, and worthy of general cultivation, though some say that it ripens unequally.

The excellent method of having double fronts to the *Vineries* is here practised to a great extent. By thus isolating the Vines the houses can be made use of for plants requiring heat, such as Pines and stove plants. The outside front windows are so contrived that they can be opened to keep the Vines cool and at rest; the inner windows are kept close, to prevent the heat from reaching the Vines. This is much superior to the old method of twisting the Vines out of the front windows and exposing them to the cold and wet of the winter. When I was gardener at Horsforth Hall, for the Rev. James Armitage Rhodes, we had to turn out the Vines through the front windows, and often had the misfortune, yearly, to twist one or two off just where the roots commenced. The hothouses here were formerly heated with rows of very small iron pipes, on the principle invented and patented by the late Mr. Perkins. The great fault of this system is the great attention it requires, and the danger of the pipes bursting. It is now pulled down, and the ordinary four-inch pipes substituted, which are found to answer much better, requiring less care, and giving a more equal temperature.

There is a very fair collection of my favourite plants the *Orchidaceae*. There is not only a goodly lot, but they are in good vigorous health. The following were in flower:—*Lycaste Skinnerii*, a good variety; *Leptotes bicolor*, with its pretty spotted flowers; *Oncidium ornithorhynchum*, several spikes of sweet-scented flowers; *O. Bauerii*, many spikes; *O. pubes*; *Phaius grandiflorus*, strong, with many spikes; and several plants of that useful winter-blooming plant, the *Stenorynchus speciosus*.

PENRHYN CASTLE.—This is near Bangor, North Wales, and is the residence of Colonel Pennant. The gardens here have been greatly improved within the last seven years, and are still making progress. In early crops, my Note-book says—Grapes, very forward; some in pots, were so far advanced (Jan. 6th.) as to have been once thinned. In one house, the Vines on the rafters were just coming into bloom, and showed plenty of bunches. I was much struck with the rich dark green colour of the leaves; I never saw a finer colour at any season of the year. I ascribed the colour to the clear glass and the narrow ribs between it. There were some excellent Pines, and some large fruiting plants, in excellent health. They are grown in low houses, and are planted out in the Hamiltonian method.

But the point in gardening that pleases me most here are the Espaliers covered with *Pears*. They are simply formed with iron uprights, and five or six iron rods stretched through holes in the iron posts. The trees are trained horizontally, every shoot as regular as possibly can be conceived, and furnished with blossom buds throughout. In all my travels, I never saw anything like them, so even, perfect, and regular.

In the Pine-stoves, on the curb-stones I noticed several plants in full flower of that pure white blossom, the *Balsamina latifolia alba*, a plant of great beauty at this season of the year. It is a good addition to our winter-blooming plants, but requires plenty of heat and moisture to keep it in health and bloom.

In a cool Peach-house I noticed a great quantity of bedding-out Scarlet Geraniums. These, Mr. Burn, the gardener, informed me, had been propagated in a very simple manner. The cuttings were taken off in August, stuck thickly in pots, and set on a gravel walk, behind the espaliers alluded to above. They were never watered, but just took what fell from the clouds, and every cutting grew, and those that I saw were the stock thus, I might almost say, carelessly stuck in.

RUFFORD HALL, near Ollerton, Notts, the seat of the Earl of Scarborough; a fine old place, with a good garden. The wall trees are uncommonly well managed. The Seymour system of training the Peach consists in not allowing any shoots on the *under* side of the main strong branches. It is a beautiful regular mode of training, and is much practised in various places in Yorkshire; but Mr. Chapman, the gardener at Rufford Hall, has adopted the singular mode of not allowing any young shoots to remain on the *upper* side of the main branches; and he assured me, he found the sap more regularly distributed, and the young shoots more equal in strength, than by Seymour's method. The fruit was regular and ripened equally throughout the tree. Peach-growers may try this, and thus prove whether there is any advantage in it. T. APPLEBY.

CARROTS AND THEIR CULTURE.

THERE are few things more precarious, as a garden crop, than the Carrot, as, from a variety of causes, a good crop cannot always be commanded on ground that seems capable of producing most other things in great abundance, for though there is every reason to believe the parent of the cultivated variety is indigenous with us, yet the high state of cultivation to which it has been brought, by breeding in and in, has so far diminished its hardihood, or made it less accommodating in its habits, that we often see it refuse to grow on ground that other crops flourish upon. This state of things is certainly, in a measure, owing to the improvement effected on certain parts of it which require a certain amount of food of just such a kind as all land does not possess in the requisite quantity, and though there be a superabundance of a contrary kind, still the habits of the plant, or rather its constitution, refuses to benefit by it. Another reason of the failure of the Carrot crop arises, not unfrequently, from the attacks of enemies against which it is not always sufficiently robust to protect itself; this occurs more often in old gardens, or grounds rich in manure and other compounds of a like nature, but it may be seen in newly broken up grounds as well. However, we occasionally see good crops in circumstances similar to both the last named; and it is not always that the eye of the experienced can pronounce whether a soil pointed out to him is a good Carrot-bearing one or not, for it often happens that the most unpromising do well, while the better-looking one falls off sadly. Nevertheless, if we look to the best districts where Carrots are produced in quantities, we shall glean a little of the reason "why they do so."

I believe I am right in saying, that a great bulk of the Carrots used in the great Metropolis are grown on the southern part of Bedfordshire and its adjoining county, Herts. These roots are grown on land, which, at all seasons, does not present such a fine, mellow surface

as other lands elsewhere, which are not favourable to this crop, the soil being a light hazel loam, rather than that sandy or gravelly soil with which we are too often wont to associate the name of Carrot. Nevertheless, a certain amount of good working and good management is requisite in all cases where good crops are expected. Now, as every garden does not possess a soil so nicely balanced to the growth of the Carrot as that of which I speak, it may be well to mention a few of the "points" which tend to secure a crop, noticing, at the same time, some of the causes of failure.

In the first place, we shall suppose the only eligible site for a Carrot-bed is in an old garden, which has been under crops of various kinds for many years, and received a liberal allowance of manure in the ordinary way. This soil, rich in humus, which, doubtless, grew excellent Cabbage, Lettuce, and similar crops, is not exactly the one for Carrots, it being too rich, and most likely abounds in the enemies so much to be dreaded in the Carrot crop. Now, the only way to manage this well, is to consider some time before-hand where the Carrot-bed is to be, and have the ground trenched in the autumn, burying a considerable part of the top soil at the bottom, and mixing some of the bottom with what remains at the top; this is done, of course, only in such places where a sufficient depth of soil is to be found, and must not be carried out too far, neither must it be delayed until just before sowing time, otherwise there will not be time for the earth to get thoroughly pulverised by the action of the air, as well as rendered sweet, and capable of germinating and supporting delicate seeds like the Carrot. Now, in addition to the trenching just spoken of, it would be prudent to take advantage of two or three favourable occasions when the top of the ground was dry, during the winter, and dig it all over, one spit deep; the last digging might only be a sort of stirring, the top side remaining as top side again. This movement of the soil is best done when a slight frost allows the ground to be trod upon without pressing it, while the tool of the operator is still able to work. It is almost needless to say, that at the last the ground ought to be made very fine, and advantage taken of a fine day to sow the seed; the crop may be fairly expected to be good, the season being favourable, and all vermin kept at bay. But it would be wrong to say that it would assuredly be good, for old gardens are not always the best places for Carrots. I ought, also, to mention, that it would be well (where a choice can be made) to have the Carrot following some other crop than one of the Cabbage family, for they generally leave behind them a train of enemies which prove fatal to the Carrot. Nevertheless, there may be instances where this may be necessary; in such cases, more energy in preparing the ground, so as to free it from such impurities, accompanied by a favourable season, will generally effect a cure; lime, of course, being also an ingredient not to be dispensed with.

The *Early Horn* variety of the Carrot is supposed to contain the best table qualification, but it is smaller than the other; the *Orange* is, perhaps, the next best, the *Altringham* having, of late years, appeared so hard and unpalatable; but much depends on the season, the kind of soil it is grown upon, and other conditions, that I have no doubt the *Altringham* may be a favourite when the other kinds are condemned. In one respect it differs from many others—there is a much larger portion of it out of the ground than there is of the others.

In summing up this subject, it is proper to observe, that when all means of securing a good crop of Carrots from wire-worm, &c., have failed, a partial one may be found by sowing this root with a crop obnoxious to the vermin spoken of; as I can well remember, in my younger days, seeing *Carrots* and *Leeks* sown in alternate rows; the latter produce, being offensive to the wire-worm,

formed a sort of protection to the Carrot, which grows pretty well under such treatment. A similar plan was in practice, about the same time, of mixing Carrots and Onions together; but the latter were speedily overgrown if the latter did anything like well. Still, it was remarkable to notice the fine, healthy Carrots on an Onion-bed, while scarce one was to be seen on the plot allotted to themselves alone; but it is needless to say, that when sown in an Onion-bed they greatly mar that crop, and not unfrequently all but destroy it.

It would be as well here to caution the inexperienced against allowing his Carrot-bed to remain too long unthinned, for the roots penetrating deeply leave long conical holes in the earth, which the enemies to the crop find a convenient lurking place; in addition to which, allowing a superfluous plant to remain beside the permanent one, depriving or robbing it of much of that food so necessary to its existence, cannot be otherwise than hurtful; and we all know that vegetation of all kinds has a much greater dislike to follow in the immediate footsteps of itself, or its next of kin, than to that of a stranger. It is, therefore, imperative on the cultivator to have the crop freed from all incumbrance as early in the season as possible, and though they need not at first be thinned-out to the full extent, they ought never to remain so thick as to elongate their leaf-stalks in such a way as to cause them to fall down when the thinning day does come. I may add, that for garden purposes, drills, fifteen inches apart, will do for the *Early Horn*, but the larger kinds may be a little wider, if necessary. Weeding, surface earth-stirring, and the like, I regard as such generally well-known maxims, that I do not repeat them in every instance, but in this, as well as in all others, it is an imperative duty where a successful result is anticipated.

J. ROBSON.

ECONOMY OF THE FARM-YARD.

(Continued from page 436.)

WHILST I am treating of the appropriation of old Farm-buildings, and their better adaptation to improved management of the manure, &c., the accommodation for Farm-Horses must not be overlooked. Even at the present day, in different parts of the country, may be seen the cart-horse stables so constructed, that the urine which flows from the stalls passes away into the open yard, and only contributes in a slight degree towards the value of the manure therein. To remedy this waste, I propose that a tank be sunk at one end of the stable, the dimension of which should be four feet wide, four feet deep, and eight feet long; this will be sufficient for a stable of six to eight horses, and may be made with bricks faced with cement, and with lifting coverlids, and the drain from the stalls should be constructed with fall sufficient to take the urine away quickly. The tank should be occasionally supplied with ashes, or other loose earthy materials, which, as fast as they become saturated, may be removed, and held in reserve as manure for ordinary purposes, or, in case it is desired, the contents of the tank may be used as liquid-manure for grass and meadow land.

There is yet another mode of accommodation for Farm-Horses, which I have adopted in my own stables for several years, and which I continue up to this time, finding, as I do, that it answers well, both in securing manure, and preserving the health of the Horses. When

I commenced the experiment, I had the old stone floors of the stalls taken up and relaid at a depth of fourteen inches below the level of the passage behind the stalls; the depth of fourteen inches across the stalls being gradually diminished until it met the old level of the floor in front, but the depth being continued, with little diminution, until it reached the footway behind the stalls. I then filled the stalls up to the level of the passage with loose loamy earth, and kept it well covered with straw, which was removed daily, and fresh litter supplied as cleanliness required, in the same manner as is usual in stalls with pitched floors. The earth is allowed to remain until it becomes saturated with urine, and begins to throw off the ammoniacal vapour. In the summer months, when the Horses eat green food, the earth requires to be changed about every six weeks, but in the winter, when the animals live on dry food, it may remain from eight to ten weeks. The advantages of this plan are, that the most valuable and volatile portion of the urine is completely absorbed and deodorised by the earth, and preserved for the purpose of manure; and this, at the same time, greatly purifies the atmosphere of the stables, and effectually removes the obnoxious vapours always existing, in a greater or less degree, in stables having pitched or paved floors, and which is found so prejudicial to the health of the animals. The out-door portion of the pens for Cattle, Pigs, &c., alluded to previously, should be made to incline towards the centre, or that part of the yard where the manure is kept, as it were, in store, in order that the drainage may circulate amongst and improve the general mass. When the manure is removed to the field, either from the yard or from the heap, it is desirable that the earth should be equally mixed with the straw portion of the dung, in order that the effect upon crops should be equal throughout the field: for I hold the opinion that a cart-load of earth which has been saturated during the accumulation of dung upon it in the cattle pens, will be found to contain more than double the amount of ammonia than the like quantity of straw-made dung.

The whole of the foregoing part of this paper has relation entirely to the making of old and ill-shaped yards and buildings as advantageous as possible, in cases where circumstances preclude any rearrangement, which would incur a considerable expenditure of money. I now propose to consider the comparative advantages of some of the most modern and best constructed Farmsteadings. Within the past seven or eight years a great number of modern homesteads have been erected in different parts of the country, and although most of them differ in design and arrangement of buildings, &c., yet one great feature prevails in all, and that is the desire to adapt the buildings, yard, &c. to the requirements consequent upon the general improvement in farm practice, in relation to the feeding of animals, preserving and preparing corn, and the manufacture of manure. The immense improvement exhibited by some of these recent structures over the old farm buildings is very striking, and one of the chief and most advantageous arrange-

ments connected with them, is the facilities for box feeding, which is adopted in the feeding apartments for Cattle, Pigs, &c. In some of them I have noticed a mixed system of management, some animals being stalled, others kept in yards with shed attached, and in all cases where stalling is practiced tanks are used to receive the liquid drainage.

The use, however, of the liquid-manure after it is obtained, and the manner in which it should be applied to the land, has been for some years a matter of much dispute between some of the most enlightened agriculturists of the period. My own opinion on this subject is, that whilst we can purchase guano, bones, &c., at the present prices, it does not pay for the labour to mix ashes, and other dry materials with the liquid, for the purpose of converting it into a drillable state, nor do I think it answers to apply it to grass land in a liquid state, unless it is highly-diluted, in which case, the quantity being so much increased makes it desirable to use it near the Farm-stead, where but little cost is incurred for carriage; it may, however, be used with advantage in this diluted state with the liquid drill. The mode of littering the boxes is important, both for the health of the animals, as well as making manure. The plan of cutting the straw has been tried, and found not to answer, unless cut into unusually long lengths, either for Pigs or Cattle; the former rout it up, and the latter, from their weight, sink into it in the act of moving about, both these causes being sufficient so to disturb the manure as to keep it in a fermenting state, which taints the atmosphere of the boxes, and proves prejudicial to the health of the animals, at the same time setting free the ammonia, the most volatile, yet the most valuable, portion of the manure. These disadvantages are completely avoided when the boxes are kept supplied with a moderate quantity of straw in the ordinary state. The method of feeding animals, and allowing them to lie on boards, or grating, whereby the manure is dropped on ashes, &c., has not met anything like general approval, yet the idea, I think, should not be entirely discarded, for in pasture districts, where little or no bedding can be procured, large quantities of good manure may be obtained, and the accommodation thereby furnished is certainly preferable to the old method of stalling, whereby nearly all the manure was lost, and the animals allowed to lie down in their own excrement.

The best mode of management of the manure when moved from the stalls, boxes, or sties, has been variously advocated even by scientific men, and by those who have designed modern farm-yards, &c.; some deem it best to keep it in the dry by a covered pit, into which the liquid-manure is allowed to run from the stalls, &c.; others advocate the open and uncovered pit; but I entertain the opinion that it should be carted to the heap, and the horses and cart allowed to pass over the mass with each successive load, it will then be firmly pressed, fermentation will be diminished, and it may be covered with earth when the heap is completed.

JOSEPH BLUNDELL.

(To be continued.)

THE CONTRAST.

By the Authoress of "My Flowers."

"REMEMBER thy Creator in the days of thy youth, while the evil days come not," is a solemn charge to the sons of men. Terrible is it to see the hoary head, when it is not "found in the way of righteousness;" and beautiful, glorious is it to see the youth giving his earliest and best ways, the first fruits of life and strength, to the service of Him, who has so emphatically said, "My son, give me thine heart." The following sketch is from the pen of our kind friend who has so often helped us to pleasure and profit.

"There now reside, in a flourishing town in the midland districts, two mercantile men, whose progress in life has been very similar, inasmuch as they have both risen from small beginnings to be men of large worldly substance. One, however, is a very aged man, and the other in the prime of his days, who, though healthy, is not nearly so rich as the elder. The rise of the younger, whom we will call Mr. Smith, has been most remarkable. His grandfather was well known in the town as a vendor of refreshments, which he carried in a basket on his arm among the market people on a Saturday night; and his peculiar cry, by which he attracted the attention of his customers, is well remembered by many to this day. By the help of some friends; his grandson obtained admission into a local charity school, where he received an education sufficiently liberal to enable him to be fitted for an apprenticeship to merchants in the same place, at, I believe, a small weekly salary. Being a steady, industrious youth, he gained the confidence of his employers, and was engaged by them, at the expiration of his apprenticeship, as an assistant, in which situation he saved money enough to enable him at last to commence business on his own account.

"Mr. Smith was a God-fearing man, and felt, as all real Christians must feel, that money is a talent which will have to be accounted for at the judgment day. Instead, therefore, of wasting his gains, he spends them to the glory of God, and the good of his fellow-creatures. I have now lying before me the prospectus of a plan for the execution of the building of an establishment, which he has already, for some years past, supported on a humbler scale, at the cost of several hundreds per annum. The prospectus referred to is headed by this benevolent individual with a subscription of £1000. This is only a single instance of his many public benefactions; his private charities to the poor, and for religious purposes, are upon the same liberal scale. He is, indeed, a pattern of Christian philanthropy, and has gained the veneration and esteem of rich and poor: "When the ear heard him, then it blessed him: and when the eye saw him, it gave witness to him. Because he delivered the poor that cried, and the fatherless, and him that had none to help him. The blessing of him that was ready to perish came upon him, and he caused the widow's heart to sing for joy."

"How painful is the contrast exhibited by old Mr. Evans, the other merchant referred to! a man of treble the wealth of Mr. Smith. Alas! where is the poor man benefited by his benevolence? or the public charity enriched by his contributions? Echo must indeed answer, where? His residence is situated about a mile-and-a-half from his place of business, in the midst of a pretty rural village. The house itself is large, and would be handsome, if there was not a bleak, cold look about it, indicative of the man who dwells within. The garden is only half cultivated; the gates and fences are in a broken and tottering state; iron palisades have their heads twisted off; hinges have given way, and gates swing and bang about at the mercy of the wintry blast. All this is a matter of little importance to old Mr. Evans, for his eye only rests occasionally upon them, and then only on a Sunday afternoon, or very early on a summer's morning, or very late on a summer's day. Business is all he cares about; can he but get gold, he cares for nothing else. It is true he sleeps at home, but that is all; he invariably leaves it at a very early hour, both in summer and winter, without seeing any of his family, except the servant who prepares his breakfast; and returns at night after all are gone to rest, except the same domestic who sits up to let him in. For weeks together, his daughters (he is a widower) have only seen him on a Sunday, and alas! then only on a part of the day; for as one sin leads to another, as a natural con-

sequence, so has covetousness, in his case, led to sabbath-breaking. On the early morning of that holy day, old Mr. Evans may be seen wending his way to town, generally along a bye-path, for he seems somewhat ashamed to meet the gaze of the church-going inhabitants. His letters have to be read, and his ledger, very probably, examined, before he feels at liberty to inhale the fresh breeze of his country residence, or to bend the knee at the Throne of Grace. So pass his days, morning, noon, and night, coveting after gold; and having gained it, holding it with a clutching grasp which nothing can loosen; no other matter seems to engage a moment of his thoughts.

"Penurious in the extreme, he has gained a nickname, significant of his character, by which he is universally known. As he passes along the street, clad in an old Macintosh, which has apparently borne the brunt of weather for an indefinite number of years, as he never on any occasion indulges in the extravagance of a carriage, whether chaise or cab, the mother turns round and points him out to her child as miserly Mr. Evans; and the young man throws out a jeer and a joke to his companions at his expense.

"In a few months—years it can scarcely be—days, it may, indeed, be, and Mr. Evans will be gathered to his fathers; sighed over by the thoughtful, sneered at by the scoffer, and lamented by none. Where then will be his riches, and what his answer to an offended God?"

Where, and what, indeed! Readers, a solemn and instructive lesson is laid before you. Here is the man who heapeth up riches; who layeth up bags of gold; who hastes to rise up early and late takes rest; who pulls down his barns to build up greater ones; who shuts up his bowels of compassion to his "poor brother," whom the Lord has given into his charge; who makes "gold his hope," and says "to the fine gold, Thou art my confidence." Even in this world he has no reward; his riches profit him nothing; he has the curse and not the blessing of the stranger and the fatherless; even men do not speak well of him. But what shall the end be? "Thou fool, this night thy soul shall be required of thee!" Consider the end of him whom the Lord himself calls a "fool." Consider the fate of him to whom the Lord himself says, "Inasmuch as ye did it not to one of the least of these ye did it not to me!" What labour it is for the meat that perisheth! If we laboured thus for that "which endureth unto eternal life,"—think of the peace and joy we should have now! think of the rest and security we should have, even while on earth, and "the end, everlasting life!"

Let the contrast between the two merchants satisfy us which is the path of pleasantness and peace, as well as safety. Godliness has "the promise of the life which now is, and of that which is to come." Godliness, springing from faith in Christ, as a blossoming branch from "the root and offspring of David." Think of the one scattering, yet increasing; think of the other, "withholding more than is meet," yet poor, and unblest, and solitary! Remember, works cannot save us! They cannot buy eternal life; nothing but the blood of Jesus Christ did that, or can insure our everlasting safety; but they follow us, and rend us in pieces, when we are not clothed in the wedding garment, which saves us from every accusing adversary. Readers! may we be found in the way of holiness, for that only is the way of peace. "He that trusteth in his riches shall fall; but the righteous shall flourish as a branch."

THE GARDEN PEA AND ITS CULTURE.

I FEEL so much delighted with those excellent, useful, and interesting papers by Mr. H., on the merits and demerits of the Pea, that I hope he will not stop when he gets to the end of its varieties, but continue onward, as opportunities may offer, through all our culinary varieties of vegetables. It is of the utmost importance to us practicals to have such really trustworthy information placed before our eyes at such a cheap rate as THE COTTAGE GARDENER does it.

I admire the plan of Mr. H. in giving us the synonymes of these various varieties, and, of course, we know, and duly appreciate, that it gives the writer much pains-taking trouble, and that it saves the reader much of disappoint-

ment and trouble. To show the value of synonymes being published, let us remember the old blue aprons knew an evergreen as the *Cupressus disticha*, for so it used to be called in the books; then some other author christened it *Schubertia disticha*, and the plant was dispersed about by this name, and by the time it became familiar to us it was changed again into *Taxodium distichum*, and the young gardener knows it by this name, but never, perhaps, heard of the other designations. On the other hand, the old gardener knew it by one of the other names, but never heard of its being changed into a *Taxodium*! Then, no wonder at the old gardeners and the young beginners being heard so often contending as to which is right about the names of plants. Both, of course, are right and both wrong, for the want of knowing more.

Now Mr. H. saves all this trouble, as far as the Pea is concerned, by giving us all the names that each variety has been popularly known by, and very nicely describes its merits and demerits.

I quite agree with him with respect to the value of the *Ringwood Marrow*. This pea I have grown for many years, and have taken many a first prize for it at our horticultural shows. When I first grew it, I used to save my own seed of it, fearing I might not be able to depend upon getting it true in our seed shops; but now, finding I can do so, I have discontinued this practice of saving seed.

Seed-Sowing. I always sow two, three, or even four kinds of Peas at my first sowing, but for years have placed the greatest confidence in the *Ringwood Marrow*, but also I sow a few of the *Early Emperor*. This year I have sown the following kinds:—*Ringwood Marrow*, one quart; *Bellamy's Green Marrow*, one quart; the *Emperor*, one pint; having two other kinds recommended to me, caused me not to sow so many of the *Emperor*, namely, *Daniel O'Rourke* one pint, and *Dane Croft Rival* one pint. These two were promised to excel the *Emperor*. The *Bellamy's Green Marrow* I have seen growing, but have never grown it before this year.

Of course, Mr. H. has already satisfied me as to the merits of the *Dane Croft Rival*, and had I seen his statement before I had sown it, I should not have given it even a trial.

Of course, the before-mentioned kinds are intended to form the first crops; were all sown at the same time. It is true, I never have taken notice how many days difference there were at the picking season of the different kinds I might have sown with the *Ringwoods*, but this I remember, being obliged to leave the *Emperor* in its prime to pluck from the *Ringwoods*, as being so very much a better pea.

The time of sowing the earliest crops, for the last twelve or fourteen years, has been, as nearly as possible, about the last day in December, or the first of January, as the weather would permit. We, like others, have had, in bygone days, fine rows of peas up at the above-mentioned time to show our friends; and what could often be said about them by the end of February or by the middle of March! A few March winds, the violent changes from mild to cold weather, the birds, slugs, and mice, left but a few ragged bits of rows, which the gardener was ashamed to be seen sticking, yet must not pull them up, for fear of losing an early dish of peas. As I said before, we always sow our earliest crops in the open quarters (which may be a little screened from the north winds by trees in the back ground) as near as possible to the first of January, having the soil up in good condition, and sown all in the same day.

The rows are measured out as wide apart as the pea grows in height. The peas are sown not sparing the seed at this season. A slight covering of sifted coal-ashes sown along each drill, which is somewhat disagreeable to the slug, &c., then the rows are nicely covered up with a spade or shovel, in the tidest and neatest manner, no labour is spared, and if any doubt exists about the presence of mice, traps are set immediately, never waiting for them to begin the rows of peas first, but we are on the alert for them in time. As soon as the pea begins to make its first appearance through the soil, a string of worsted is strained from end to end of each row, the worsted being strained about six inches above the pea; this is a protection from the birds.

When the peas are all fairly up, advantage of a fine day is frequently taken to stir the earth well up, and among the peas in the rows, and a dusting of quick-lime is frequently applied of a fine evening or morning, as a donation to the

slugs; and on the appearance of severe frost setting in, if the peas are a little above ground, a top-dressing of charcoal dust is sown over the rows. If we have not sufficient of this article, a barrowful of leaf-mould, or the like, is run through a coarse sieve, and sown over the rows. This is done in a tidy, workman-like manner, being strewn along with the hand from a basket. This is not confined to one dose; but these sort of dressings, lime-dustings, earth-stirring, bird's-frightenings, and looking-out for the mice in time; this, mixed-up with thoughtfulness, watchfulness, and feeling a little delighted and determined to have whole rows of early peas for sticking, and although the sticks form a little protection to the pea, as well as supporting them, we always defer this as long as we can, for the purpose of being the better able to keep the earth frequently opened, and attending to the lime-dusting to destroy the slug. Previously to sticking, the earth is well forked-up between the rows, and then, with a spade or shovel, they are nicely and neatly basined-up, without bringing the earth too close up to the stems.

Since we have adopted the early spring sowing, and determined to sow our first crop of peas about the 1st of January into the best prepared soil, and the after-attention, I do not remember a single instance of disappointment; but we have always had the best of crops, and, for ought I know, quite as early as any of our neighbours.

T. WEAVER.

THE SPANISH FOWL, AS RECENTLY EXHIBITED.

THE coasts of the Mediterranean sea have long been noted for the quantity of fowls kept by the inhabitants of those countries; and the traveller, whose observant eye has not disdained to notice their peculiarities, has readily distinguished certain connecting links between them, leading to an inference of their common origin, however manifestly illegitimate might have been their immediate parentage.

These points of resemblance may be concisely stated as a full development of comb and wattles, in both sexes, with a large white ear-lobe, of which colour the face of the bird is seen in a more or less perfect state. Now, the modern fancier has rightly considered that this latter feature, the white face, is not merely highly characteristic of the Spanish breed, but likewise presents the most effective combination of colour. It is required, therefore, that a good specimen should have the whole face, including the ear-lobe, formed of a carunculated pure white skin; to this is added an uniform plumage of glossy black, with a comb rivaling the brightest coral. But, who has ever attempted to breed the Spanish fowl, as described above, without being speedily convinced of the extreme difficulty of retaining the entire white face free from any tinge of red? The most convincing answer to this question would be a reference to the Spanish pens at an exhibition, where, as a general rule, the prizes are awarded to those which are least deficient, rather than to those which are most perfect in this respect. The exceptional cases would be limited to the produce, comparatively speaking, of a very few yards; and where triumphs have been most frequently achieved, the number to be selected from has been an equal element of success with the inherent excellence of the strain.

A larger proportion of first-rate chickens might be extracted from any other race of fowls than we should hope to see from Spanish. We must not, however, be misunderstood as to the purport of these observations. No discouragement is designed to those with whom these beautiful birds have so justly gained favour; but, on the contrary, if their past efforts have not hitherto been so entirely satisfactory as they would have desired, perseverance, based on the recognition of the difficulties, should instigate to further exertions.

But what is the character of the majority of the birds exhibited as Spanish? The face (and this is the point we are now concerned with), and even the pendent ear-lobe, is commonly stained more or less with red, so that the fowls are frequently not to be distinguished from good specimens of what are called "*Minorcas*," which have the ear-lobe, and sometimes even a considerable portion of the face, of a

good clear white. Hence the question so often put in these columns as to the difference between the *Minorca* and the *Spanish*.

The comb and wattles of the former are as fully developed, their plumage of as rich and refulgent a black, and their form, where attention has been bestowed, is as good; although, perhaps, as their general character, of a somewhat shorter and more compact description, but insufficient in itself to authorise a distinction. Thus, when *Minorcas* are shown in the class for "*any other distinct breed, not as specified above*," their position is not justified by the facts of the case. Close relationship plainly exists, evidenced, moreover, by several other common properties. Adherence, however, to our present system seems to require the definition of the Spanish fowl, after the enumeration of the other needful points, as having the skin of the face, as well as the ear-lobe, of pure, unstained white.

The *Minorcas* are not the only fowls that exhibit traces of family connection with the aristocratic Spanish, properly so called; although, from the similarity of feather, they are those mainly concerned in the matter we have just referred to. The pied and speckled birds known in the Western districts of England as *Anconas*, and the blue *Andalusians*, are manifestly offshoots of the same stock, and being possessed of economical properties fully equal to their white-faced black cousins, deserve, in our opinion, some recognised position on the poultry-list. Competition with these latter is out of the question, lacking, as they all do, more or less, the peculiar characteristic of excellence in the bird to which this name Spanish is now, "*par excellence*," applied. But since, as they are really valuable fowls, might it not be possible to give them the encouragement of a class for "*Spanish fowls of any other variety*," entitling the former as "*White-faced Black Spanish*?" There would be no subtraction from the acknowledged merits of the present exclusive holders of the designation, that would, indeed, of right, be shared by any other fowls of Spanish origin, and that the *Minorca* and *Andalusian* families would thus claim admission, will not be contested. We have no desire whatever to place *Minorcas*, *Anconas*, or *Andalusians*, in competition with the white-faced *Spaniard*, for they would assuredly suffer by the comparison; but the legitimacy of the latter does not necessarily infer the mongrelism of the former. The quality of the face of the Spanish fowl being all-important in the eye of the judge, other points are not to be less strictly scrutinised; and prize pens have frequently appeared with this feature alone meritorious, while figure and condition have been viewed in too favourable a light. Let us have the white-face, by all means; but this must not be regarded as compensation for the presence of any manifest defect elsewhere.

Although the principal honours of the Spanish pens of 1853 fell to a previous victor, yet it will, we think, be admitted, that the quality of the birds has generally improved; there were fewer decidedly bad pens, and the Judges' labours, therefore, were not so readily performed. Many of the best birds, however, moulted late, and it required every exertion to get those that were intended for Birmingham in proper form before the appointed day for their debut in Bingley Hall. Some specimens imported from Spain were there shown, verifying the general opinion that not a single bird of really high merit has recently been obtained from that country. Holland and Belgium, too, have been ransacked for Spanish; but however careful the selection, they still failed in placing their owner's names at the head of the awards.

But the terms of commendation that are so justly due to the birds of this class that have usually taken prizes at the more important exhibitions, must not be extended to many of the provincial meetings, where a most meagre collection of Spanish has usually been present. Judges, it is clear, have again and again been of this opinion, where we read, "first prize withheld; no sufficient merit." And when birds are manifestly deficient in any one important point, we rejoice to see such righteous sentences boldly pronounced, nothing being more injurious than affixing a false value to really bad birds, by assigning them a prize simply from the fact of no competitor of higher merit having then and there entered the lists. The injustice of complaints on such grounds has only been

equalled by the absurdity of the arguments by which these murmurs, loud and deep, also, have been supported. An unfortunate bystander is forcibly carried off to some scarlet-visaged pen, and told how unfair the decision that refused them a prize—"Bred from ———'s best birds, I assure you; cost ———; therefore, is it not clear that I ought to have won with them?" If the conclusion is not always so plainly uttered, nine times out of ten it is uppermost in the mind. Talk to them of an imperfect face, bad condition, foul feathers, malformation of the comb, or any other blemish, however apparent, the fact of their descent alone is still regarded as the one important point for consideration. If twelve eggs are purchased, it seems to be thought a most unluckily mischance if twelve first-rate chickens are not produced and reared. What has been already said as to the patience requisite for the production of prize Spanish, would assuredly save much disappointment in this respect.

There has been more than one instance, of late, where Nature is thought to have done her work so imperfectly that art is called in to complete it. We allude, especially, to such Spanish birds as have a good face, but the line of feather above the eye is thick and continuous. This defect has suggested various operations by the tweezers, and even the razor would seem to have been thus employed. Such practices, we need hardly say, are readily detected, and are most justly punished by the immediate disqualification of the birds thus tampered with. If the face has become anyways dirty, washing with cold water is all that is needed, and anything beyond this is far more likely to do harm than good.

A dark, heavy line of feather between the eye and the base of the comb certainly mars the effect of a good face, and the breeder should seek to get rid of it, though by means less objectionable than those just referred to. Many a bird otherwise good in face is thus disfigured; for we know not if we could lay our hand on a single specimen without one feather on this part. But with the example before us of what has already been effected by Spanish breeders within the last few years, we are certainly justified in looking forward to improvement in this particular.

The Spanish chicken classes frequently require more careful treatment at the judge's hands than their seniors; the latter, in a mature state, stand or fall according to their present form; while the former, pullets more particularly, would petition for some prospective consideration. And this, stern advocates as we have ever been for judging all birds "*as they are*," we think them entitled to. The difficulty is to read their present looks aright.

Poultry books abound with recommendations of the Spanish fowls to the inhabitants of cities and large towns, alleging their sable plumage as an imperceptible recipient of dirt and smoke. From the condition of many pens, we must suppose that this advice has been very extensively acted on, and that they had thus supplanted the very porker in the possession of his sty. But the refulgent character of the bird's plumage soon vanished under such unfair treatment, and no denizen of our yard does greater credit to the enjoyment of a good healthy run.

A pen or two of *White Spanish* are occasionally exhibited, but, like the parsnip that was described as a "*sick carrot*," they are poor, meagre-looking birds, destitute of all the charms that commend the black Spaniard to our notice. Many of these are, probably, "*albinos*," like the white birds bred by black Polands, and, consequently, of the same constitutional weakness. But others that now present themselves in a white garb may have once been differently clothed, for a strong family link between the various fowls that have been spoken of as of Spanish origin is the extensive metamorphosis that they are apt to undergo during the process of moulting. Spanish, Minorcas, and Anconas, have continually come to our notice under such circumstances, and the Andalusian, we are told, is no exception to the rule. The black becomes a mottled, and, sometimes, though rarely, even a perfectly white bird, and subsequent moults have, at times, restored the bird to its former garb, while in other instances the change has been permanent.

There is every reason for believing that the Spanish classes for the coming season will bring out numerous competitors, and thus, wherever the honours may fall, the victory will be proportionately more glorious. As to the

adult classes, the exhibitions even past will afford a tolerably clear indication of the names that are likely to appear as winners, saving always the case of newly-imported birds. The chickens, however, from the immense numbers of eggs and birds that have now been distributed, forbid any such anticipations, but in both one and the other we are sanguine as to the breed retaining its present high position.

SUGGESTIONS FROM THE GARDEN AND THE FIELD.

By Cuthbert W. Johnson, Esq., F.R.S.

ORGANIC CHEMISTRY, AS ILLUSTRATING THE WISDOM AND BENEFICENCE OF THE CREATOR.

THERE are certain trains of thought into which we are all pretty sure to be led by the scenes in which we are placed. Our curiosity is excited, our attention directed to the phenomena around us. We naturally become desirous of information, and are insensibly led towards that point at which our knowledge ceases. No person sees more of such inviting objects of inquiry than the farmer and the gardener. They daily witness mysteries upon mysteries, all full of interest, which the chemist aids them to only partially understand. Let us accompany an intelligent cultivator around his fields, and when we are partaking of his pleasures in the inquiry after knowledge, let us store with him a few of the wholesome reflections which may present themselves during our walk.

A very early impression will suggest itself as we commence our observations, that from the moment that God ordained that man should be formed in his own image, should have breathed into him the breath of life, from that moment commenced, in his case, a series of chemical phenomena, all made subservient to his comfort and to his happiness; in which the wisdom of the design is only equalled by the beneficence with which it is realized. In furtherance of the object of this essay, let us merely glance at these mighty arrangements. In a single great instance or two, let us consider only some small portion of the chemistry displayed in the formation of our bodies, our breathing, and our food; and in so doing, let us not attempt to exhaust the subject by closeness of analysis foreign to the objects of this little sketch, but rather let us adhere to those more prominent, and easily understood, facts, which every highly educated person most readily understands.

The creation of animal life was preceded by certain preparatory events, which laid, as it were, the great foundation for those which so speedily followed in their train. The pasture was first prepared—the banquet was already spread on the earth's surface—food was created for other organised beings before animal life first tenanted the globe—the wants of animals were foreseen, their comforts attended to by the omniscience of Omnipotence in a manner which demonstrated, at the very commencement, His care for their future welfare, His regard for their happiness.

Vegetables were the first created of all organic substances (Gen. i. 11); the creation of plants preceded that of animal life, and as it would seem almost of necessity, since they were destined to be the food on which the animal tribes were alone to subsist. The sacred historian, therefore, as soon as he has described, in his sublime language, the creation of heaven and the earth, and of light, and the separation of the earth from the water, next tells us that God ordained that the earth should bring forth *tender grass*, the herb yielding seed, and the fruit-tree yielding fruit. This was the first grand step towards the creation of animal life; it was the preparation of the pasture in which a still more perfect class of organized beings were to dwell; and these, too, under every imaginable form and variety, and in countless profusion. Every leaf was intended to contain its animalculæ, every blade of grass its tenants. On these leaves, and on these grasses, the superior classes of animals were to feed, to rest when weary, and to seek in ill health for the cure of their diseases.

It was necessary, therefore, to adapt the chemical composition of these grasses to the digestive powers of the animals, which were immediately afterwards created, and

which were to subsist upon them. It is evident, that if they had been formed devoid of the sugar, the oil, the fat, the starch, the vegetable albumen, and other nutritious matters in which they all abound; if, for instance, they had been composed entirely of earths or metals, that then these could not have served as the food of animals. This is not entirely an imaginary case; only consider those plants in which the earth Silica in unusual proportions abounds, and note how nearly devoid of nutrition they are. Take the *straw* of Wheat for an example, in which it is found in considerable proportions (while it is absent entirely from the *seed*); or the Dutch Rush, in which it exists in still greater abundance. In these, it is true, the Silica is fulfilling a very useful purpose, by imparting to the stems the requisite degree of hardness and strength to support the seeds; but how nearly devoid of *nourishment* they are, every poor beast wintering in a straw-yard by his very appearance indicates.

The marvellous difference between the chemical composition of the seed of the Wheat, and the straw which supports it, can only be explained in one way—by the contrivance and the beneficence of the Deity. It is idle to say that it is all the offspring of chance; chance never yet accomplished anything so remarkable as even the formation of a common piece of mechanism. No one ever regards the possibility of the chance formation of a water-mill, or a steam-engine, even if eternity is imagined as allotted for the operation; and yet the contrivance and the wisdom displayed in the construction of these machines is just nothing when compared with the operations going on in a vegetating plant of Wheat.

The chemist detects many of these, even to him, mystic operations, by the examination of vegetable chemistry. He finds in the flour of the Wheat only three or four substances, such as carbon, hydrogen, oxygen, and nitrogen, so that there is little reason to complain of the number of the ingredients; but how these three or four substances are united together, so as to form vegetable substances, he cannot, by any chemical reasoning, explain. He sees that the union is accomplished, that the gluten and the starch of the Wheat are produced with unvaried regularity, but it is a process far beyond his powers of imitation. It is true, he can readily decompose them, and separate the elements of which they are formed, but it is in vain that he attempts to recombine those elements, so as to form the animal or vegetable substance in which they previously existed. Those marvellous combinations are the works of a Divine Author, and of Him alone.

(To be continued.)

DORKINGS, AS RECENTLY EXHIBITED.

THE writer of the article in your last number, under the above heading, is so conversant with his subject, and the whole article is so well written, it is the more necessary that some stricture should be placed on points in which he appears to be in error. The observations on comb and colour are so correct, and well stated, they cannot fail to produce benefit, and will, it is to be hoped, have an effect beyond their apparent intention of giving a helping hand to the judges in their decisions; aiding their well known desire to cast to the winds all priority arising from these accidental appendages. If the great object we have in view be the improvement of the various breeds "of domestic poultry," it should clearly be our desire (especially in this class of the "Farmers' Fowl") to induce every exhibitor to bring before the public, as "Models," the best birds in his possession. But under the present system of *practically* requiring, in the same pen, hens and pullets of the same comb and colour. (good matches as the phrase goes), I appeal to the experience of every exhibitor of any note, whether for the sake of this object he does not frequently leave at home, not merely his *second* best, but frequently sends his sixth, or, it may be, his tenth best bird for the sake of effecting the "match." Nor does the evil rest here. Young Amateurs are constantly applying to eminent breeders to supply them with fowls, and either fail in their object altogether, or obtain a disparity in quality, because, following the error of the exhibitions, they are content only to secure "good

matches!" Now, as sisters of the same clutch frequently vie with each other in all points of excellence, and differ only in those of comb and colour (a fact acknowledged by good breeders), I ask, whether it is not desirable to discard these contingent and imaginary qualifications?

With respect to weights, also, the writer correctly observes, that vast improvement has been made in the last year without the sacrifice of symmetry. But he must permit me to consider him greatly in error, and unwittingly misleading the public, in stating that "ten pound cockerels, and eight pound pullets have been no uncommon productions in the exhibitions of the last year." That such Dorkings have been exhibited, I can myself testify; but it is far from the fact that they have been common. And there is this important consideration attached to the error, that Tyros applying to prize winners for fowls, feel disappointed, and, perhaps, something more, in finding the birds sent fall far short of the standard stated to be "*common*," on such good authority. Let any one doubting the above appeal to that best of judges, Mr. Baily, and the writer will readily succumb to his decision.

There is one other mistake to which I must also allude in reference the Reigate Show. That the limitation of this Exhibition to the three adjoining counties was an error, is admitted by the gentlemen who took the active part in its formation and management, and will be rectified for the future. But how far the "*limitation tarnished the laurels that were there won*," may be decided by the following facts. All the first prizes in the Dorking class were taken by a clergyman in Kent; and the same fowls, in the same month, took all the first prizes at Hitchin, where one pen of chickens was claimed for fifty guineas; and the same fowls were exhibited at the Metropolitan, in January, and there again earned the first three prizes. In classes five and eight, by the Rev. J. Boys, the exhibitor on the two former occasions; in class six, by Mr. Smith, the gentleman who claimed these birds at Hitchin. As these are the only occasions in which these fowls have been exhibited, I confidently appeal to the candour of the writer of the article in your last number, whether they have not amply redeemed the laurels which the limitation is said to have tarnished."

[In reference to the above remarks we readily admit, that if the expression of an opinion that "cockerels of 10 lbs., and pullets of 8 lbs., have been no uncommon productions," could be construed as equivalent to an assertion that such specimens were *common* objects of every day experience, the statement would be inaccurate. The sentence in question, however, merely implies that birds of these weights have been shown on several occasions, and, consequently, that they may justly be held forth as models for the breeder's imitation, although a degree of skill and judgment beyond that of the novice will certainly be found requisite for the attainment of this result.

The allusion to laurels won at Reigate being tarnished by the limitation of exhibitors at that show to inhabitants of the adjoining counties, refers simply to the credit of the prizes there gained. No disparagement whatever of the birds themselves was thereby designed, nor any inference conveyed as to their appearance, favourable or otherwise, at any other exhibition. It will hardly be questioned but that a premium, even with unrestricted competition, reflects higher honours than the championship of a single district.—Ed.]

VEGETABLES AND FRUIT OBTAINABLE IN MARCH.

THERE is so little to be got in addition to those mentioned for last month (p. 365), that it seems a waste of time and space to repeat them. Many things, such as Cucumbers, Beans, Strawberries, &c., will just be getting more plentiful. I hope the sanguine will keep the preliminary remarks in that page in mind. I shall mention one or two matters to which my attention has been directed.

1. BLANCHED TURNIP TOPS.—I have had these in use for a number of years. I did not, however, invent the dish, but saw it mentioned as a good one, if I mistake not, in an almanack published by the proprietors of the "Illustrated News." Most people relish turnip tops when in a green state after they begin to grow in spring, and that is just the

time when it would be useless to attempt to blanch them, as the top would rise too quickly, be apt to be stringy, and on the whole not so good as the green-growing top out-of-doors. In winter they are preferred by many even to Sea-kale. Darkness, and a heat from 50° to 55°, produce them in great perfection, such as in a slight dark hotbed, a mushroom-house, &c. Nothing more is required than to get the turnips from the field, with the top uncut, and when stuck upon soil or litter the head will soon push, and should be cut when about six inches long. A second or third crop may be taken, but the first is always the strongest and best. Besides, if long cut, the turnips are robbed of their nourishment, but if cut only once, the turnip is little more injured than it would be in the field by the end of March or the beginning of April. I have tried various kinds, but all others are either bitter or insipid, except Swedes. Their blanched tops, as a winter dish, are really delicious.

2. **BLACK PRINCE STRAWBERRY.**—I mentioned, in an article, last autumn, how well this did for a late crop out-of-doors; how scarce I was of it for an early crop; and how I shifted some, potted them, plunged them in a little heat, keeping the tops cool, hoping that thus time might be gained, and that these plants might be induced to bear an early crop. In this I have, to a certain extent, been disappointed. My *Keen's Seedling*, potted early in small 48's, have beat them hollow. I intend, therefore, to give them a fairer chance next season, by early potting, as that I have long found to be the great essential, along with early maturing of the bud, for early forcing. Besides being less fruitful with me than *Keen's Seedling*, they seemed more tender, and more liable to insects. All this I mostly attribute to their late potting, and mean to give it another limited trial, as some of my friends have had good crops since the new year. I mention this chiefly to show that no doctoring of the plants in autumn will compensate for the want of early potting and early maturation of the buds. At this season, and onwards, plants will do pretty well when lifted and potted, and put with or without pots into moderate hotbeds. The extra heat, in these cases, should, for the first ten days, tell chiefly on the roots, by allowing a stream of air to pass over the tops. On the whole, though I value the *Prince*, unless for an early crop, I would never think of substituting it for *Keen's Seedling*.

3. **TOBACCO.**—Thanks to sulphur fumigations, these Strawberries are the chief thing on which an insect presented itself. I sent for some strong shag, and they sent me what I believe they call *bird's eye*, and it seems to be pretty well "all in my eye," as far as the fat flies are concerned, as they look just about as stupidly comfortable next day as a man who has half smoked himself blind. Now, if two smokings, at most, will not make them all tumble from their perch, a person would extirpate them cheaper by using his fingers and soot and lime-water from a syringe. I cannot say I have been thoroughly satisfied with any substitutes for tobacco. The question, however, is well worth a friendly ventilation; first, as to the materials that have been successfully used as substitutes; and, secondly, as to the best and cheapest tobacco for the purpose, and where that is to be conveniently obtained; a hint not unworthy the tobacco manufacturer, as an article that would quickly destroy insects, and not hurt the plants, would meet a most extended sale; what is sold as slag in the grocer's or tobacconist's retail shops being so different in its quality. All beginners should use it rather weak at first.

CAULIFLOWER.—This was mentioned last month, but it and *Snow's Brocoli* will now be getting on the wane. The latter is one of the best helps the gardener ever had. Sown in March and April it will produce beautiful, white, firm heads from the end of October. The frost came upon me sooner than I expected, and I covered it up where growing with litter and refuse hay, and I have had a good supply to the present time.

5. **RHUBARD AND SEA-KALE.**—Where there are no means of forcing these out-of-doors they may easily be forwarded by taking the roots up and placing them in soil in any dark place, with a temperature ranging from 50° to 60°; and these roots, cut to pieces and planted out in April or May, will be fit to force again in the second season. R. FISH.

AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA.—DEC. 1853.

The following donations were announced:—

1. Seeds of the 'Cabbage oil,' and blue dye plants of the Chinese, and seeds of four varieties of Melons. Presented by Mr. R. Fortune.

The following is extract of Mr. Fortune's letter respecting the above seeds:—

"The *Cabbage oil plant* forms one of the staple productions in the Provinces of Chekiang and Keang Soo during the winter and spring months, and is highly valued by the Chinese. I believe the Chinese kind is considered more productive than any of our European varieties, and it is possible it may be better than those at present cultivated in India. At all events, I send it round for trial, and venture to suggest its being sent to a district where oil of this kind is produced. The "*Tein Ching*" (*Isatis indigotica*) is the plant which produces the Shanghai liquid Indigo, a substance largely used in this part of China, where blue cotton cloth is in great demand amongst the masses of the people. The four varieties of *melon* are also sent for experiment. They are valuable in China, not so much on account of their flavour as their productiveness, and they grow luxuriantly without that care which it is necessary to bestow upon English melons introduced to this country. In the summer months the markets are abundantly supplied with these fruits, which are, in fact, the apples of the country, and are eaten by the natives much in the same way as we see apples in country towns at home."

The following communications are also submitted.—

1. From W. G. Young, Esq., Under Secretary to the Government of Bengal, furnishing extract of a letter from Mr. R. Fortune, dated 18th July, seeking more precise information regarding the Chinese green vegetable dye, to which the attention of the Society was called by Mr. Henley, in March last.

2. From R. Fortune, Esq., dated Chusan, 18th July, on the subject of obtaining seeds, plants, &c., for the Society.

With reference to the above two communications, it was agreed, on the recommendation of the Council, that a copy of M. Persoz's Memoir, published in '*Les Comptes Rendus*,' sitting of the 8th October, 1852—on the green vegetable dye of the Chinese, be forwarded to the Government of Bengal for Mr. Fortune's information. Further, that the sum of £50 be placed at Mr. Fortune's disposal, to enable him to meet all expences, export freight, connected with the Society's requisitions for plants, seeds, &c., and that the P and O Company be solicited, as a special case, to forward such boxes of plants as Mr. Fortune may send from Shanghai free of freight to the Society.

DOMESTIC ECONOMY.

THERE is a great want, at the present time, of good publications relative to "common things." Lord Ashburton and others are most wisely making an effort to have a knowledge generally diffused of those "things," for they include all that is useful in our every-day life. That effort is much impeded by the want of appropriate publications, and we, therefore, are glad to meet with one which is quite suitable to the purpose. It is written by Mr. Tegetmeier, so favourably known by his communications to our columns, and is entitled *A Manual of Domestic Economy: with Hints on Domestic Medicine and Surgery*. It is very small, very cheap, and very sensibly written; indeed, it may be fairly characterised as being common sense applied to common things. The following extract from it is a fair specimen, and is especially deserving of general circulation at this time of dearth:

"WHEAT AND ITS PREPARATIONS.—The variety of wheat chiefly cultivated in Great Britain is that termed *Lammas* or winter wheat, being usually sown in September or October. Spring wheat, so named because it is sown at that season, is less productive.

"Wheat is one of the most nutritious of the corn plants; before being ground, the grain contains from twenty to thirty per cent. of nutritive substances, chiefly gluten. When ground into fine flour, it is not so nutritious, as a

large proportion of the most nourishing substances resides in, and is removed with, the bran, pollard, and middlings.

"Coarse flour contains all the most important substances required to support life, namely, nutritive food in the gluten, warmth-giving in the starch, an abundance of fat and oil, and a high proportion of bone-making and nutritive materials, in the pollard and bran; it follows, therefore, that brown bread, which contains a proportion of bran, &c., is a much more valuable food than that made from the finer flour, from which these substances have been entirely extracted.

"*Bread.*—Good bread should be made of wheaten meal, or flour, water, salt, yeast, and a small quantity of potatoes. Baker's bread frequently contains also a quantity of alum; this is added for the purpose of enabling inferior flour to be used; it renders the bread whiter, firmer, and less crumbly when cut. The employment of this powerful astringent, however, is decidedly injurious, and aperient medicines are often requisite to counteract, in some degree, its evil effects.

"Flour, when mixed with water and yeast, and allowed to stand, undergoes a process called fermentation, and a portion of gas is thus generated. This gas, owing to the tough glutinous character of the dough is not able to escape, and it causes the latter to swell, and assume a spongy character, which greatly contributes to the digestibility and excellence of the bread.

"In preparing home-made bread, the usual plan is to mix the materials together, and allow the fermentation to proceed for about four hours before putting the dough in the oven. Bakers, however, adopt a very different course; they mix a small portion of the flour with yeast, and set it to ferment for some hours previous to making the mass of dough; this they term "setting the sponge," and it is doubtless the best plan when a large quantity of bread is required. Good bread is of so much importance in a family, that the writer has taken some pains to procure the best receipt, and he has to express his obligations to Mr. Duer, of Bond-street, for the following directions, which, when strictly followed, he can state from experience, furnish bread greatly superior to that ordinarily made in private families.

"*To make a Half-peck Loaf.*—Take three-quarters-of-a-pound of well-boiled mealy potatoes, and mash them through a fine cullender or coarse sieve, add to them one-eighth-of-a-pint of yeast (about two table-spoonfuls), and one pint and three-quarters of lukewarm water (88° F), together with about a-quarter-of-a-pound of flour, to render the mixture the consistence of a thin batter; this mixture should be set aside in a warm place for six or eight hours in order to ferment, at the end of which time, it will be found (if it has been warmly and closely covered over,) to have risen considerably, and to resemble yeast in appearance, except in colour. The sponge so made is then to be mixed with one pint of water nearly blood-warm (viz., 92° F.), and poured into the half-peck of flour, which has previously had one ounce-and-a-quarter of salt mixed with it, and kneaded into dough, which should be allowed to rise in a warm place for three or four hours before baking. After the dough has risen, it should be handled as little and lightly as possible whilst it is made up into loaves.

"In some cases it will be found convenient to set the sponge over-night, and make the dough very early in the morning; or the sponge may be set very early, and by keeping it and the dough rather warm, the loaves will be ready for baking in the afternoon.

"In the writer's family, bread made according to these directions is found to bake admirably in 'The Cottager's Stove': the only caution required is to turn the loaves upside down when nearly done, to brown the under crust.

"Bread should never be eaten until it is twenty-four hours old. When taken sooner it cannot be masticated properly; it is therefore swallowed in doughy masses, extremely difficult of digestion.

"Some few years since, unfermented bread, in which the place of yeast was supplied by carbonate of soda and muriatic acid, was extensively tried, but the nicety of manipulation required, and the great attention necessary in weighing and measuring, renders the plan unfitted for general use; with care, however, it is capable of furnishing an exceedingly palatable and wholesome bread. At the present time, various bread powders and patent flours are

sold, capable of making light bread by the addition of water only; they contain, however, chemical substances which remain in the bread, and impart to it medicinal, or in some cases even injurious, properties.

"The only chemical substance capable of being used without any injurious effect in making bread is the carbonate of ammonia. This is largely employed in light biscuits, &c. It is converted into vapour by the heat employed in baking, and renders the biscuits very light, whilst it is itself entirely carried off during the process.

"All cakes which contain, in addition to the ingredients used for bread, fatty materials, as butter, lard, or dripping, are most indigestible, and unfit for children or persons with weak digestion. It should always be remembered that fat, when heated with flour, forms a compound which is acted upon by the digestive fluid slowly and with difficulty; hence most kinds of pastry, as pies and ordinary puddings made with flour and suet, are not suited to children or invalids. Biscuits containing butter are open also to the same objection.

"The following directions for making a perfectly unobjectionable pudding for persons recovering from illness are extracted from Dr. A. Thomson's "Domestic Management of the Sick Room," a valuable work for all whose duties call them to the care of invalids:—

"Grate half-a-pound of stale bread, pour over it a pint of hot milk, and leave the mixture to soak for an hour in a covered basin, just large enough to hold it, tie it over with a cloth, and boil it for half-an-hour." Sugar, and a little thin paring of lemon peel, may be added to give a pleasant flavour."

AMERICAN NOTES.

It appears, from the following statement taken from the Zanesville Gazette, that the wheat crop of Ohio is annually diminishing. The yield was

	Bushels.
Wheat crop of 1850.....	35,000,000
Wheat crop of 1851.....	25,000,000
Wheat crop of 1852.....	25,000,000
Wheat crop of 1853.....	22,000,000

Four years' crop.....107,000,000
Average crop of four years.....26,750,000

At the New Hampshire State Fair, Gen. Riddle, of Bedford, exhibited two horses, one 26 and the other 28 years old. The old fellows plowed their eighth-of-an-acre in nineteen minutes, without rider, line, or whip. They have been kept for several years on a daily allowance to each of three pounds of cut hay mixed with three quarts of Indian meal and moistened.

The Short horn Bull, *Fourth Duke of York*, purchased a few months ago at the Earl of Ducie's sale, by Gen. Cadwalader, of Philadelphia and Geo. Vail, of Troy, N. Y., for five hundred guineas, died on board the Ship, Queen of England, on the passage between Liverpool and New York.

The friends of Dr. Ward, of Cincinnati, and, indeed, all the friends of Horticultural science, will be pleased to learn that he has so far recovered his health as to be able to resume his labours as the principal editor of the *Review*.—He will be assisted by Mr. Ward, and the *Review* will doubtless deserve, as it has heretofore done, the support of every friend of Western Horticulture and rural arts.

One of our exchanges thus describes a corn stock harvester recently invented:—"Between two wheels there is an axle, to each end of which is attached a knife for cutting each row of corn. To the axle is also attached shafts for the horse which pulls the machine.—The horse walks between the rows of corn, and the knife just inside of each wheel cuts the corn, which falls on a bed to catch it, in a manner resembling the operations of a wheat reaper. The bed which catches the corn, opens to the centre at the pleasure of the operator to discharge the corn in bundles. We are informed, that with one man and a horse the machine will cut 20 acres of corn per day. It is the invention of a citizen of Illinois."

Mr. C. A. Chapman, in giving an account in the *Michigan*

Farmer, of the productions and profit of Broom corn says:—"I raised this year a piece on forty-eight rods of ground. After cleaning off the seed, I had so large a pile I thought I would measure it.—I had twenty-five bushels rounding measure; a little over a half-bushel to the square rod, or about eighty-five bushels to the acre. I need not say the land was rich to produce such a crop; but it was not cultivated as it should have been. It was planted in drills, and the cultivator passed through it once, and then I went through with a hoe and thinned it out, but it was left too thick, so that there were many small heads. The seed is excellent to feed sheep and lambs, and poultry, whole; but for all other feeding it should be ground. It is heavier than oats, and I think worth more per bushel when ground."

—*Iowa Farmer and Horticulturist.*

THE SHANGHAE FOWL.

It is unjust to deny that they possess individual points of great beauty, even if the "*tout ensemble*" be not so symmetrical or so attractive as that presented by the Game fowl. Their most inveterate opponents must admit that the head of a good Cochin fowl is handsome—that in the face-expression of the pullet, especially, there is much beauty, and also a *loving tenderness* and an intelligence not observed in other poultry, which make them especial pets with those who rear them. There were grace, symmetry, and majesty, in the birds belonging to Mr. Harrison, of Snelston, which took the first prize at Derby, and which, indeed, made them appear to belong to a different race of birds from those long-legged, bony, shapeless, distorted, things which generally pass under the name of Cochin-China fowls. Not every cow with short horns can be fairly considered as a type of those beautiful and useful animals which, emanating from the meadows and byres of Charles Collings, in Durham, have spread themselves over the kingdom under the appellation of "short horns;" nor should every mongrel fowl with long legs, short tails, and ugly bodies, be considered as the representatives of the Shanghai fowls of Sturgeon, Punchard, Herbert, and Fairlie. Honored names these! who have kept the field against all comers, for buff, partridge, white, and black Cochin's respectively. Not but that in some stray combat they have been beaten, as Staunton in a solitary game of chess, or Pilch in a single inning at cricket, but in a season's campaign they are ever victorious, and public acclaim awards to them a place in *Poultry* annals as high and as honored as those occupied in the "*Herd Book*" by Collings, Bates, and Ducie. But to return from the breeders to the breed. Let the best specimens of each variety be considered in a review of their respective merits, and it will be found that they are not destitute of beauty. The "buffs," perhaps, are more adapted to the quiet, sober taste of English people, to that peculiar sense of the beautiful which regards an entire suit of black as the appropriate and graceful dress of a gentleman, and denounces variety or colour in costume as vulgar and "unbecoming." Hence the popularity of these said "buffs" or Sturgeonite Cochins; but the Partridge ones, in perfection, are not to be despised. The white variety (if variety be strictly applicable to birds which cannot be depended upon for continuing their characteristics in their offspring) is very handsome, when obtained of good form and colour, like the fowls from Mrs. Herbert's, of Powick. They possess deep red combs and wattles; and with these, beaks and legs which rival the golden splendour of those of the Blackbird. These red combs and golden legs contrast beautifully with their milk-white plumage. Upon a grass lawn, stretching out in front of some old mansion, like Haddon, or Hardwicke, they look very attractive, and with Peacocks, and golden-pencilled Hamburgs, form a group fit for the inspection of Majesty, and would have fascinated the pencil and the brush of that immortal poultry painter with the hard name, Hondekotter.

However, utility should precede beauty; and in the estimation of the British Farmer, "handsome is that handsome does;" and here the Shanghai fowl will not be found wanting. As I have said before, they are *excellent* layers, and arrive at maturity earlier than any other large-sized fowl. By the term "maturity," I mean the age at which a bird

will commence laying eggs, and thus perpetuate its race. They will, moreover, prove *hardier* than any other fowl, except the Game breed; at least my experience supports this assertion. In a very elevated position, with the thermometer for many days at 12 or 14 degrees below the freezing point, and during the night of January the 3rd, three degrees below zero, six Cochin fowls, five Spanish, eight Dorkings, and four Golden-pencilled Hamburgs, had to brave the cold, with no further protection than that afforded by a common poultry shed, without artificial warmth. Upon the first, the cold left no appreciable mark; the Spanish were sadly "mauled," the combs of all of them shrinking into small dimensions, and becoming as black as a choked cobbler; the Dorkings also suffered slightly (with one exception); the only parties escaping scatheless being the Cochins and the Hamburg fowls. Of these two, the birds from the Celestial Empire had the advantage, for they laid eggs almost daily, while their pretty companions postponed this duty until the mercurial tube of the thermometer should attain a more respectable position in society. When this has been achieved, they will, doubtless, again resume their cackle, or, to use the fine language of our apothecary, they "will express themselves in the natural language of philogenitiveness."

And now, what are the *points* which a good Cochin-China cock should possess? It should be of large size—an adult bird of two years old ought to weigh at least ten pounds—it should have a round head, short, thick neck, a broad back, and strong shanks, wide apart—the shanks and legs and outward toe should be well-covered with feathers, and the toes should be four in number, the middle one being much longer than all others. The eye should be large, reddish in colour, and expressive. His feathers should be abundant—the saddle feathers large, and flowing gracefully downwards to the ostrich-like tail. The comb should be upright, indented, and projecting backwards; the hinder parts of the birds should have a square appearance from a mass of soft "fluffy feathers." The faults to be guarded against are those which approximate the fowl to the Malay, that is, a long face, long, *clear* shanks, and *close-fitting* feathers; or to the Dorking, by a *fifth* toe destitute of feathers. The early-imported birds were many of them crossed by these fowls, and the stain will frequently show itself even in the third generation. The Amateur demands a *uniform* colour in the Buff, free from white or mealy spots, and similar unity in the black and white varieties. Practical farmers can afford to smile at these niceties—and look to form, quality, and substance as preferable things. If a fowl, like a Dutchman's tulip, were a thing *merely* to look at, these fancies might be very well; but so long as the essential characteristics of this breed be guaranteed by *shape* and *size*, it will suit both the farmer's pocket and his future success to wink at a "dark hackle," or a "mealy wing."—*Verbum sat sapientibus*—which our clergyman tells me is the Latin for the wise saying, that a nod is as good as a wink to a blind man.—(A DERBYSHIRE YEOMAN, in the *Derby Reporter*.)

GREAT MORTALITY AMONG BEES.

I STATED, in my communication to you, last summer, that the honey season ceased on the 18th of June in this district; I will now inform other apiarians of my fate. My stock, last year, consisted of eighteen hives, four of which swarmed, so that at the end of the season I had twenty-two hives. Three out of the four swarms died early in the autumn, and to-day I have discovered that fourteen more are dead, in many of which there is plenty of honey, but only a few dead bees. The continued damp and foggy weather, in November and December, succeeded by intense frost, seems to have acted most injuriously, for many of the combs were covered with mould. Some of the hives were in bee-houses open to the south, others on stands facing east, and all protected by bee-pots, with a quantity of tow under them, to keep the hives warm. Perhaps some of your apiarian correspondents who may, or may not, be similarly situated, can give me some information, why and wherefore the great mortality.—A COUNTRY RECTOR, *Tadcaster*.

TO CORRESPONDENTS.

. We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

ROOT-CROPS ON HEAVY SOIL (*A Subscriber from the Beginning*).—Your strong land, if it has been fallowed, and submitted to the effect of frost during the past winter, should not now be ploughed any more this season for root-crops, but worked with the scarifier as often as the weeds make their appearance; by this culture you will retain the kind, mellow surface which the frost has given you. All the root-crops on this soil will do best drilled upon the flat, with artificial manures applied; and in case you have a quantity of charcoal saturated with liquid-manure, or night-soil and ashes, or soot, or, indeed, any of these useful fertilizers, let them be used with, and in addition to, the usual quantities or kinds of artificial manures now in use. Mangold Wurtzel of the *Orange Globe* variety is the best for your soil; and the manure to be applied by the drill should be two cwt. of superphosphate, with an admixture of a liberal quantity of any of the above-named fertilizers; but before drilling these, barrow in and sow broadcast two or three cwt. of Peruvian guano per acre, according to the state and condition of the land; also, at any after-period, if the plants do not look prosperous, sow over them two cwt. of guano just before rain may be expected, using the hand or horse-hoes to connect it with the soil. Upon your land sow *Skirving's Improved Swedes*, drill upon the flat, and manure with two cwt. of superphosphate, three cwt. of bone-dust per acre, and also a good allowance of the before-named fertilizers. Guano will not answer for this crop upon your soil, because the roots would be liable to decay in the winter months. If the Common Turnips required are for early feeding, you cannot do better than use the seed of the *White* or *Red Tankard* variety, to be manured and managed in the same manner as recommended for the Swedish Turnip. These remarks are made at the request of "A Subscriber from the Beginning;" but all these subjects will be found treated of in detail in different back numbers of THE COTTAGE GARDENER, at their respective seasons or periods; we must, therefore, for further and full information upon this subject, refer to the articles in question, which have appeared in due course of the year 1853.—J. B.

RHODODENDRON-BED (*J. O. W.*).—A bed of them seven feet high, and five feet of that "like walking-sticks," may as well be left as it is till the top flowers; at all events, the second week in May is about the best time to cut such Rhododendrons. Six weeks before that, or say by the first of April, all the smaller shoots, below five feet, ought to be cut to four, five, and six inches from the older stems. The buds on these short stumps will be getting so forward that they will start with buds on the stronger branches on equal terms. See this more explained to-day in another page. In May, cut the strong branches at different lengths, from five feet to eighteen inches.

BUDDING ROSES (*Ibid.*).—All the Perpetuals ought to be budded in the last fortnight in June, in order to grow and make some progress before frost. All the summer Roses will do from the middle of July to the end of August. *Hybrid Perpetuals* should never be budded between the 10th of July and the 20th of August, but they are safe enough as soon before that and as late after that as buds can be had and the bark moves freely. The wild shoots should not be shortened at the time of budding, nor until September, and even then it depends on the sorts and the forwardness of the buds. Shoots budded in June should be stopped to half their length in about a month.

VINES IN A GREENHOUSE (*Ibid.*).—As they have been so long under greenhouse treatment, you may begin to force them now by closing the house early in the afternoon, and as long as the glass keeps above 45°. You need not use fire-heat till the last day in March. All through April keep the fire-heat from 50° to 60°. Next year you may begin forcing by the last week in February, and after that at the beginning of the new year. If you find the least difficulty in forcing the Grapes, the middle of January will be your best time to begin, and then not to use fire-heat above 50°, for the first six weeks, nor let the house cool below 45°, unless the weather is very cold indeed, when about 40°, early in the morning, before the leaves come, would not be too cold. There is always more danger from too much than too little heat in first forcing of Vines and all fruit-trees.

COATING FOR HOT-WATER TANK (*J. M.*).—You have a hot-water wooden tank, and have used pitch and coal-ash to coat the inside, but find the hot-water melts it. You wish to know what material will cause the tank to be water tight. We know of none, excepting you try Roman cement, and if that does not answer, then coat it with zinc; or, perhaps, it will be the cheapest and best to adopt the latter material on once.

GOLDEN-SPANGLED COCK (*A Subscriber*).—Mr. Tegetmeier's paper on the 2nd of February does not at all refer to "Hen-feathered Golden-spangled Cocks," but to a well-known phenomenon of pullets of any breed that are barren assuming the gait, crow, &c., of the cock.

MIMULUSES AND PETUNIAS (*Ibid.*).—Your best Mimuluses are No. 1, 5, 7, and 9. You should procure *Rubini*, and *Beauty of Scarbro'*. Your best Petunias are your No. 2, 5, 6, 9, 12, 15, and 17. *Beauty Supreme*, is a light lilac; *Beaute de Moulins*, rose; *Incomparable*, dark; *Prince Arthur*, purple; *Lady Cultum* and *Triumph*, striped. The rest are unknown. The best *Calceolarias* to grow near London, are your No. 1, 3, 5, and 7. Your *Stewartii* we do not know. By *Pelargoniums* you mean, we suppose, the flowers known as Florists' Geraniums. You wish to know the names of a dozen or more suitable for a new beginner, and you add, "not too tender." You are, indeed, a new beginner, or you would know that all Pelargoniums are tender, and that there is very little difference in their constitution. Procure the following, they will please you:—Optimum, Astrea, Lagonia Kulla, Conspicuum, Chieftain, Enchantress (Foster's), Governor, Incomparable, Lord Mayor, Magnificent, Magnet, Mochanna, Purple Standard, Pearl, and Virgin Queen. If you do not mind expense, add Regalia and Virginia.

VERBENAS FOR CUT TRUSSES (*M. C., Dublin*).—The following Verbenas truss well, and are good for exhibition:—*White*, Smith's Alba Magna; *Blue*, Caie's Blue Bonnet; *Crimson*, Barker's Conspicua; *Pink*, Turvell's Ariel; *Scarlet*, Smith's Monsieur Julien; and *Purple*, Monsieur Paquin.

MUSK DUCKS (*J. D. K.*).—You can obtain their eggs from any dealer, or specimens of the birds themselves. Those entirely white are said to be the best.

CLEANING ROSE LEAVES (*An Enquirer*).—Nothing more is required than tepid water and a sponge. It will remove all the soot and dust. The oftener it is applied the better the Roses will thrive.

DIRECTION (*A. A.*).—Mr. Turner is a very respectable man; his direction is "Parkwood Springs, Neepsend, Sheffield."

VEGETABLE MARROW (*Adolphus Yates*).—Sow the seed in small pots, and plunge in a gentle hotbed early in April, and turn out the plants into a warm, rich, sheltered border, giving at first a little shelter during May. They require no culture but to have the branches trained regularly over the ground.

ROOF ADVERTISEMENT (*Vectis*).—Not knowing anything about the advertiser we cannot give an opinion.

WHITE MULBERRIES (*A Subscriber*).—Write to Mr. G. Balchin, Spring Place, Godalming, Surrey.

ERROR—p. 427, col. 2, line 40 from the bottom. For "Pencilled Game Fowl," read "Tasselled Game Fowl."

AMERICAN POULTRY BOOK (*F. L.*).—We cannot give any information about it. It is quite worthless.

ADVERTISEMENT (*Harriett*).—It would be 3s 6d.

COCHIN PULLET (*A Young Beginner*).—Never mind the rattling in the throat, as the pullet is quite well.

SAND FOR CUTTINGS (*G. A. G.*).—Silver sand is the best for striking cuttings.

DWARF PEAS (*T. Burgess*).—We know of no good Peas only one or two feet high. The shortest which we know that are really good are the *Scimitar*, *Spanish Dwarf*, *Imperial Blue*, and *Dwarf Green Marrow*.

INFLUENCE OF THE MALE PARENT.—*H. T., of Birmingham*, asks—"If I take away from my Cochins a cock that has been with them since Christmas last, and substitute another, how soon shall I get genuine eggs by the last cock?" Another correspondent asks the same question as to *Game Fowls*. We can only reply, that as a hen of any breed will continue to lay fertile eggs for about three weeks after being entirely removed from a male bird, it cannot be safe to depend upon a fresh cross until after the lapse of that period. The subject, however, does not rest there, for there are evidences to show that characteristics of the first male will appear in the progeny occasionally for the remainder of the female's life. It is a mysterious subject strongly illustrative of the text—"These two shall become one flesh."

BLACK MALAYS (*M. T. G.*).—We do not know this variety, but will give you a fuller answer next week. We should have thought them to be "Pheasant Malays," only you say they are "perfectly black," and have "yellow legs."

KNOWLEDGE v. IGNORANCE (*S. Amey*).—We are obliged by your paper; but why combat a phantom? Mr. Stansbury means as you do, "a little learning is a dangerous thing."

ALOE (*A Constant Reader, Co. Dublin*).—We presume you mean the *Agave Americana*; and if so, the late winter was not only cold enough to kill it, but has done so according to your description of its appearance.

VALUE OF LAND IN AUSTRALIA (*F.*).—The following will give you an answer:—"VALUE OF LANDED PROPERTY IN BRISBANE.—An allotment containing 33½ perches, at the corner of Queen and George-streets, North Brisbane, has this week changed hands for £620. The allotment has nothing on it but a fence; but it is an excellent situation, and has three frontages; 3 acres, 1 rood, and 21 perches at Kangaroo Point, the cost of which, when purchased some few years ago, was £50, has recently been sold for £400. A small brick cottage, and the allotment on part of which it stands, in Queen-street, was purchased less than six months ago for £400, and has this week been sold again for £1000. These sales have been effected by private contract."—*Moreton Bay Courier*.

LAND SALE.—The most important sale of land ever held in Brisbane, whether we consider the quantity of land offered for sale, or the high figure at which most of the allotments were purchased, took place at the Court House, on Wednesday and Thursday last. There was present the largest assemblage of bidders we ever witnessed, and the biddings were very spirited, parties appearing determined to secure their favourite allotments at any price. The most extravagant rate given was for allotment 6 of section 28, purchased by Mr. Gibbon for £210, being at the rate of £1000 per acre. The extraordinary high rates given for allotments at the intended village of Sandgate struck every one with astonishment, and led the more thinking portion of the community to believe that a mania had seized the purchasers. However, the result of the sale, which realized £15,000, sufficiently evince the improved prospects of the town and district, and the increasing demand for land. Only three country lots remained unsold at the close of the sale, and these were afterwards taken at the upset price, whilst we have every reason to believe that very few of the deposits will be forfeited."—*Moreton Bay Free Press*.

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WEEKLY CALENDAR.

M D	D W	MARCH 23—29, 1854.	WEATHER NEAR LONDON IN 1853.		Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo. Wind.							
23	Th	Platysma nigrum.	29.855—29.829	40—23 N.E.	01	57 a 6	15 a 6	4 2	24	6 45	82
24	F	Chloenius festinus.	29.843—29.891	41—17 N.	06	56	17	4 45	25	6 27	83
25	S	LADY DAY.	29.916—29.847	41—18 N.E.	—	54	19	5 15	26	6 9	84
26	SUN	4TH, or MIDLENT SUNDAY.	30.025—29.906	44—17 N.E.	—	51	20	5 38	27	5 50	85
27	M	Calathus melanocephalus	30.063—29.999	50—27 W.	—	49	22	5 55	28	5 32	86
28	Tu	Stomis pumicatus.	30.150—30.129	48—21 E.	—	47	24	sets.	29	5 13	87
29	W	Clivina fossor.	30.141—29.995	48—26 E.	—	45	25	7 a 25	1	4 55	88

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 52.2° and 33.8° respectively. The greatest heat, 75°, occurred on the 27th in 1830; and the lowest cold, 14°, on the 25th in 1850. During the period 118 days were fine, and on 71 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 453.)

CARDAMINE HIRSUTA: Hairy Lady's Smock; Lesser Hairy Cuckoo Flower.



Description.—It is an annual. Root of many white fibres.

Herb variable in size and luxuriance, deep green, more or less hairy, rarely quite smooth. Stems from three to twelve inches, or more, in height, usually several, erect, usually furnished with lateral branches of various lengths, leafy, angular, often zigzag, hollow in the centre, clothed with fine, prominent, scattered hairs. Leaves alternate, all pinnate (leafleted). Stem on short stalks, without stipulas; leaflets stalked, sometimes alternate, all for the most part somewhat hairy; those of the root-leaves roundish, or heart-shaped, coarsely notched, numerous, and forming a circle on the ground; those of the lower or middle part of the stem more oblong; the upper ones narrow-reversed-egg-shaped, or quite line-like, blunt, generally entire, but in this respect, as well as in length, they vary. Flowers small, in a flat, upright cluster. Petals white. Two shorter stamens often wanting. Pods in long clusters, erect, slender, smooth, or occasionally hairy, their valves undulated by the projection of the seeds; stigma almost stalkless.

Time of flowering.—March to June.

Places where found.—It grows on dry, gravelly banks sometimes, but occurs most frequently in moist shady places. Not uncommon.

History.—Some botanists have considered this to be merely a variety of the *Cardamine parviflora* of Linnaeus, a species not native of England, but the short pods, bushy stem, and differently-shaped leaflets show that *parviflora* is another species. The present species, *C. hirsuta*, has a stronger flavour than *C. impatiens*, and in Ray's time many persons used it as a salad herb. — (Smith. *Withering. Ray.*)

THE word *Ehaloeth* is used in the Old Testament to describe both a wood and the tree from which it was obtained. In the first case it is translated in our version ALOES, and in the second case as LIGN ALOES.

Wherever the wood, or its produce, is mentioned, it is in connection with two aromatics—Myrrh and Cassia (*Psalms* xlv. 8; *Prov.* vii. 17), and with some others by Solomon, who says, in *Canticles* iv. 13. 14—"Thy plants are an orchard of Pomegranates, with pleasant fruits; Camphire and Spikenard, Spikenard and Saffron; Calamus and Cinnamon, with trees of Frankincense; Myrrh and Aloes, with all the chief spices."

The mixture of aromatics last mentioned appears to have been in high esteem, and to have been that especially preferred by the Jews for embalming purposes. Thus we are told that "Nicodemus, which at the first came to Jesus by night, brought a mixture of Myrrh and Aloes, about an hundred pounds weight. Then took they the body of Jesus, and wound it in linen clothes with the spices, as the manner of the Jews is to bury." (*John* xix. 39, 40.)

The quantity thus employed has been objected to as

excessive, but it is certain that the quantity of spices and fragrant gums either burnt, or applied to the body upon such occasions, was always proportioned to the honour intended to be paid to the deceased. Thus at the funeral of Herod there were five hundred spice bearers; and at that of Gamaliel eighty pounds of Opobalsamum alone were used, to say nothing of other aromatics. (*Joseph Antiq.* l. xvii. c. 10. *Talmud, Mess-achoth Semach.* 8.)

The *Ehaloeth* was used, however, for other purposes, and amongst these the perfuming of bedding and dresses are specified in the texts which we have quoted. For such purposes resins would not be suitable, and this seems a testimony that the wood itself imparted the perfume. This is corroborated by some of our best Hebraists who agree that the word employed in the Old Testament uniformly denotes a kind of wood or tree.

This suggests the question, by what name is that tree now known? Dioscorides, and some modern Arabians, with a few intermediate writers, have called this wood *Agallochon* or *Xylaloe*, which is a compound word, meaning "The Wood of Aloe." Why they should so

call it, though the interpreters of our Bible adopted the name, is difficult to explain. *Aloe*, however, we may observe, is the Hebrew name deprived of its initial and final letters.

We find that the Tradescants, those "treasurers of Nature's rarities," had "*Agallochum*" among the woods (*Ligna*) enumerated in their Catalogue of the *Museum Tradescantianum* (p. 31). Of this very specimen we have the following narrative by Parkinson, under the title of "*Agallochum* or *Lignum Aloes*." "I have seen with Master Tradescant, the elder, before he died, a great piece of true *Lignum Aloes*, and of the best sort, as big and as long as a man's leg, without any knot therein, which, as he said, our King Charles gave him with his own hands, but was here kept before, and accounted by many as a great religious relic, even to be a piece of the wood of that Cross whereon our Saviour was crucified, and therefore was fetched away again from his son (Tradescant junior) to be kept as a monument or relic still." (*Theatrum Botanicum*. 1565.)

This *Agallochum*, we are of opinion, was the wood of one or other of the two trees now called by botanists *Aquilaria agallocha* and *Aloexylon agallochum*. The first belongs to the Natural Order of *Terebinths*, or Turpentine, and the second to the *Legumes*, or Pod-bearers. They are both of the Linnæan class and order *Dicandria Monogynia*. The following note by Mr. Don is applicable to each of these trees:—"The wood is white, and has long been used as a perfume. Aloes wood is held in high estimation in the East on account of its fragrant odour, and as a perfume is applied to clothes and apartments, as well as a cordial medicine in fainting fits, and in cases of paralytic affection. By the Chinese and other heathens it was used as incense at their sacrifices.* In the East Indies it was formerly deemed of greater value than gold, and various fables have been invented as to the origin of the tree that yields it. Some have feigned that it grew in Paradise, and that it was conveyed from thence by the rivers overflowing their banks and sweeping away the trees. (*Don's Dichlamydeous Plants*, ii. 464.)

A perfume so precious, and of such imagined origin, may well have found praise in the verses of the Hebrew Poet; may well have been selected by the prophet as a simile for the tents of Israel; and may well have been selected as appropriate for embalming the body of our Lord.

It is no valid objection that the trees we have named are natives of the East Indies, for we have abundant proof that for such costly products of the East the merchants of Tyre visited and trafficked with the inhabitants of India. We have had occasion to notice this traffic in our notes upon the *Almug*, and shall have to notice it further when remarking upon the *Calamus*.

It is an erroneous induction that by *Aloes* some native tree of the Holy Land must have been intended, otherwise Balaam, in his prophetic simile, would not

have compared to such trees the tents of Israel. So far is this from being the case, that we find in these highly poetized utterances the most costly products are referred to without any restriction as to the place of their birth. Thus Solomon, when narrating the plants of his ideal gardens, brings together with Pomegranates and other products of the temperate zone, *Calamus* and *Cinnamon*, which live only beneath a tropical sun. (*Canticles* iv. 13, &c.)

Balaam, in the simile alluded to, said that the Israelitish tents were "as the trees of the Lign Aloes which the Lord had planted." That is, which grew vigorously and naturally. Thus in another place it is said, "The trees of the Lord are full of sap, the Cedars of Lebanon, which he hath planted" (*Psalms* civ. 16). Under the term sap is included all the liquid products of a plant; and it may be noticed that the value of the wood of the *Aquilaria* and of the *Aloexylon* are just in proportion to their size, or vigorous growth, and the resinous secretions which they contain.

Our country friends, who drink each out of his own well and his own cistern, have a great advantage over the inhabitants of large towns—an advantage increasing in proportion to their nearness to the natural sources of rivers, and consequent remoteness from river mouths. Good water is confessedly only one of a hundred indications (natural, moral, social, and, we may safely add, political and religious*) which we are bound to follow out and adopt, if we hope materially to improve our sanitary condition; and its influence is much more indirect than has been taken for granted; yet no readier test suggests itself to us of the advancement of a refined and intelligent civilisation than the care bestowed on an artificial water supply; a subject which we hope to resume in a future paper.

Dr. Kidd says, in his "Treatise on the Adaptation of External Nature to the Physical Condition of Man," "Although there is scarcely any substance which water is not capable of dissolving to a certain extent, and, consequently, no natural form of water is pure, yet, in almost every instance, the natural forms of water are not only innocuous but salutary." And Dr. Smith, in a paper read at Edinburgh, before the British Association, has proved that well water is ordinarily freed from accidental pollutions in the process of filtering through the earth. When, unfortunately, from long occupation, or neglect, or other causes, the whole subsoil where we inhabit has become so charged with animal and vegetable refuse and corruption that the very water of our wells is tainted, it is obvious that the purest water brought from a distance can be no more than a pallia-

* Ray, in his *Historia Plantarum*, ii. 1508, says, It is very costly, and on that account was strewed on the funeral pile of the Princes and Priests of India.

* The following is from that portion of the Report of the College of Physicians contributed by Dr. Gall. "The immunity of the Jews in this metropolis was better ascertained, and, according to good authority, depended upon their attention to hygiene (or rather to their sacred law.) Their houses are cleansed annually, and are not overcrowded. They are, as a class, sober, and in their diet, scrupulous. There is no extreme destitution among them, their wealthy classes relieving those in distress. Their Sabbath is rigidly observed as a day of rest.—Page 160, *Reports on Epidemic Cholera to the Royal College of Physicians*, by Dr. Bailey and Dr. Gall.

tive. The necessity for a large adventitious water supply, then, argues a sanitary condition not altogether natural—not to be compared with thy happy lot, gentle reader, whose waters are thine own, and not strangers' with thee. *Thy fountains are blessed.*

In a former paper (in October last) we ventured to assure the readers of this Journal, that if the water which they use be not offensive at all to their senses, it will rarely prove unwholesome; and that it is rather in the form of vapour diffused through the atmosphere, than in a fluid state in our drink, that *water is likely to prove the means of spreading cholera and other plagues.* This point is beginning to excite considerable attention; and, at the risk of appearing paradoxical, we must beg to enter into some details for the edification of our country friends.

The thick-and-thin advocates of a water in no case beyond four-and-a-half degrees of hardness by Clark's test, along with water-closets inside the house, and water-tight sewer pipes four inches in diameter, have invariably adduced a certain pleasant little country town in the Lake district as their chosen standard of health and longevity. Reckoning the cost of the above necessities of existence at about £10 or £15 per house for any given town, and then, as a set off, comparing the value of life in the town proposed to be improved with the value of life in the town of Ulverstone, taken as a standard, it has always been proved that these really valuable improvements cost nothing at all; the money laid out upon them forming a most desirable investment of capital. But about two years ago, the gentlemen of Ulverstone bethought themselves that they would have a water company; and the fact was then established that this very healthy town had a water not at all answering to Clark's test, with very primitive arrangements, indeed, in the way of water-closets and house drainage.

Conversely—in a small manufacturing town at the other end of the same county, contrasting unfavourably with Ulverstone in everything relating to health, an abundant supply of water of four-and-a-half degrees, Clark's test, has been introduced within the last few years. One half of the people now use this excellent water, but the mortality is in no way diminished. An improved water supply has been provided for a large country town much nearer London, with a similarly indecisive result on the health of the place.

Our friend, Dr. Popham, relates, that at Cork, some years ago, a very bad form of dysentery was attributed to the water of the place. A very pure spring was brought in from a distance, and the disease disappeared for a long time, but with the famine it reappeared, and continued defying the water supply.

A short time ago, a whole family died, near London, of malignant fever, after drinking some water out of a ditch bottom. This last, in strict agreement with certain established principles, was set down as the cause of death. On analysis it was found full of vegetable, &c., remains, and was pronounced unfit to drink unless filtered; but some arsenic which had been swallowed in

the food was suggested as a supplementary cause, at least, of the illness of the family.

The Tyne, under new and enlightened arrangements of liquid sewerage, receives the drainage of Newcastle, where the cholera was most prevalent within the atmospheric influences of the vapour from the river. The town has been lately supplied with Tyne water, to a certain extent, taken from a higher source; a questionable proceeding, no doubt; but a house to house visitation failed in proving either that the districts supplied from this dubious source suffered most from cholera, or that those drinking the purest water suffered the least. Something more, then, than bad water is required to cause death; and something more than pure water to prolong life.

This point has received the fullest examination by the Committee of the Royal College of Physicians, whose report on cholera is now before us. A report which we must beg to refer to, once and again, as a mine of facts and illustrations of the whole of the very difficult subject which we have in hand.

"This theory, then, as a whole, is untenable. It has, however, directed attention to circumstances which may be hereafter shown to bear a part in the production or increase of this as well as other epidemics; and the enquiries it suggests must not be neglected, when the causes and mode of propagation of such diseases are again made the subject of investigation. It is not probable that in the case of cholera the influence of water will ever be shown to consist in its serving as a vehicle for a poison generated in the bodies of those who had suffered from the disease. But it may be proved that the poisonous matters which produce cholera, as well as other epidemic diseases, are capable of increasing in foul water as well as in foul air. At all events, it is scarcely probable that water containing putrid matters in a state of solution or suspension can be habitually swallowed without, at least, the risk of injury to the health. This subject needs, and is likely, henceforth, to receive more systematic investigation. Already, indeed, since the last epidemic of cholera in London, one mode, in which a large surface of water contaminated with the foul outpourings of sewers may largely contribute to the unhealthiness of a city, has been set forth with scientific precision by Mr. Farr. With the aid of calculations made by Mr. Glaisher, he has shown that in the summer season as much, *probably, as four million gallons of water rises daily* in the form of vapour from the surface of the Thames, at London, carrying with it into the atmosphere some portion of the putrid contents of the river."—(*Dr. Baley's Report*, p. 213, 214.) J. J.

"THE Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce," under whose auspices so successful a Poultry Show was held at Plymouth, in June, 1853, propose to hold their exhibition for the present year at Bath, on the seventh and two following days of the

same month next ensuing. Chickens, we observe, are specially required, in addition to adult birds in the Spanish, Dorking, and Shanghae, varieties, the remaining classes being open to birds of all ages. The prize-list stands much in the usual form, but we must confess ourselves surprised to find that the premiums for Geese, Ducks, and Turkeys, of such limited amount in comparison with those offered for fowls; for, while many of the latter have £3, £1 10s, and 15s for the first, second, and third, respectively, none of these "farmer's" birds obtained more than £1 for a first, and 10s for a second prize. At a meeting of so strictly an agricultural character, the contrary policy, we should have imagined, would have been preferable.

The rules are clear and precise, and under the same able management of the director, Mr. Gray, by whom the arrangements of the Plymouth Show were so admirably conducted, we venture to anticipate equal success for the Bath meeting.

THE meeting of the *Entomological Society* for March was held on the 6th inst., and was fully attended, with the President, E. Newman, Esq., F.L.S., in the chair.

The Secretary announced, with a view of obviating some of the inconveniences which had been experienced in former years, that the Council had resolved thus early to announce the days for the two *annual excursions*, namely, on the 10th of June to Pembrey, near Tunbridge, Kent, and on the 8th of July to Mickleham, both excellent grounds for collecting, and of easy access by railroad. Tickets, taken before the 2nd of May, are to be charged half-a-crown; after which time the price will be raised.

Mr. Westwood called attention to a periodical work, the publication of which had been recently commenced, and which, from an examination which he had made of it, appeared to be a clumsy compilation from "Stephens's Manual;" the figures were also worthless.

Mr. Curtis exhibited a series of larvæ of various insects recently captured by himself on the continent, including those of a supposed species of *Ophonus*, one of the ground-beetles, and of *Stenoloppus vaporariorum*, another of the same tribe; those of *Cistela atra* and *Prostomis mandibularis*, the latter a curious beetle, the larvæ bearing a strong resemblance to that of *Pyrochroa*, and found under the bark of decaying Chesnut-trees; the larvæ of a supposed *Helopterus*, a clavicorn water-beetle, and that of a *Pyrallis*, which is very destructive in boxes of preserved insects, spinning its web over the specimens, which it gnaws to pieces. Mr. Curtis also called attention to the curious fact, that many of the rare varieties of butterflies exhibited at previous meetings of the Society had been taken in the neighbourhood of Ipswich and Colchester; he likewise mentioned several other similar instances in which the same locality had produced other varieties; and Mr. Samuel Stevens exhibited a fine variety of the White Admiral butterfly, *Limenitis sibilea*, also from the neighbourhood of Colchester. The latter gentleman also exhibited speci-

mens of a species of *Burnet Moth*, recently captured for the first time in Galway by Mr. Milner. It is the *Anthrocera minos*, and is distinguished by the large patch of crimson on the fore wings, not broken up into smaller spots. Likewise a number of beautiful Lepidoptera, from the north of China, recently sent home by Mr. Fortune, who is again engaged in Natural History and botanical pursuits in the *flowery empire*. (We take this opportunity to mention, that since the Meeting, we have received, from St. Petersburg, a memoir on the *Lepidoptera* of the neighbourhood of Pekin, sent home from the Russian Mission, which has been established for several years past in that city.)

Mr. J. Stevens also exhibited a number of beautiful butterflies and moths, collected at Port Natal by Dr. Guenzius; and also a specimen of the magnificent *Morpho Cypris*, belonging to the Society (forwarded from Bogota by Mr. Stephens), which, having become saturated with grease, had been entrusted to him to be cleaned. He had accordingly immersed it for three days in camphine, and had then covered it with pounded magnesia, and it had by this means become perfectly restored to its former splendour, being, in fact, the most beautiful of all hitherto known butterflies.

Mr. Frederick Morre exhibited a quantity of cells of clay, manufactured by some Indian species of Mason Bee or wasp, collected at Dacca; the greater number contained a pupa case, and in one of the cases a beautiful parasitic *Chrysis* had been found; whilst, in another, which did not contain a case, was found the pupa of a species of *Vespidæ*, the parent of which had probably taken possession of the cell already built by the real architect.

Mr. Desvignes exhibited a beautiful variety of *Melitæa Dictynna*; and Mr. Foxcroft a quantity of whalebone shavings, infested to a considerable extent by the larvæ of one of the *Tineidæ*, which reside in portable cases, probably *Tinea pellionella*; as well as the larvæ and perfect insects of *Boletophagus crenatus*, a small beetle found in the Boleti, growing upon beech trees in Perthshire, where it had been first discovered by Mr. Foxcroft, two years ago.

Mr. Dale forwarded a notice of the capture of *Hemerobius dipterus*, a new British species, at Langport, in Dorsetshire. This species had been previously described by Dr. Burmeister, in his Handbuch, ii., p. 973.

The President read a notice from Mr. Rawnsley, of Moreton Bay, New Holland, in which he expressed his willingness to collect objects of Natural History and Botany upon reasonable terms. This is an excellent opportunity, of which we trust our botanical as well as entomological friends will avail themselves. A similar statement was made from Dr. Reichardt, the curator of the Geological department of the Royal Museum at Copenhagen, who is about to proceed to Minas Geraes, and other parts of Central America, and who offers to collect insects, &c., on remarkably low terms. Parties subscribing for three years, at £12 per annum, are to receive a large amount of objects in return.

A paper was also read from Dr. Reichardt (a transla-

tion of which, by Dr. Wallich, was commenced by Mr. Spence), on a *luminous larva*, found at Lagoa Santa, in South America, where it has been found creeping from beneath the timber flooring of houses. Each segment of the body emits two patches of greenish light on the upper surface, whilst the head shines with a ruddy light, like a burning coal. It was supposed to be nearly allied to the Glowworms, and to the Luminous Paraguay Worm of D'Azura. A notice was also read of the introduction to Malta, from Assam, of the Indian Eria Silk Moth (*Bombyx Cynthia*). This insect is of very large size, and feeds upon the Castor Oil plant. Its silk is very strong. The notice had been published, with details, in the Journal of the Society of Arts of the 3rd of March. A long paper by Mr. Newport was read, affirming the priority of the discovery by himself of the larvæ of *Monodontomerus nitidus*, a parasite on *Anthophora retusa*, one of the Mason Bees.

COLLECTIONS of dried *British Ferns* and their allied plants may now be had complete of Mr. F. Y. Brocas, who pursues the occupation of a British Naturalist, at his residence, 10, Tavistock Street, Covent Garden. He will readily assist in the purchase or exchange of any specimens connected with the zoology or botany of the British Islands.

It is a general remark that *Oranges* were never before so stained in the rind as they are this year. The brown, rough stain complained of seems to be the result of the attack of some minute Fungus like that which attacked the Grape.

Some months ago the formation of a *Pomological Society* was advocated in these pages, and steps are now taking to carry out the suggestion. We shall shortly give more particulars.

TRAINING PEARS.

I MUST now offer a few further remarks on Pears, and in so doing will take a glance at the various modes of training. At Oulton, we have chiefly table trellisses, umbrella training, horizontal-radiate, and a kind of hollow form, and on the walls, curved-parallel training, and a few on the old fan form. There are many other modes practised, according to the varying fancies of persons, for, after all, there is less importance in the mode of training than some people imagine. Any mode of training which will best allow the sun's rays to act on the foliage in general, tend best to equalise the sap, and provide for the most warmth, is, in my opinion, the best; and in this respect two or three forms may claim almost equal merit.

For my part, I have found the *table trellisses* the best, although it must be admitted that some kinds do not succeed so well on them as on others; indeed, the same may be said of any form. The table trellisses are four feet six inches wide, and are about a foot to fifteen inches above the ground level. The main branches, on which are tied down the young spray, are about one foot apart in parallel lines, running north and south. The trees were planted about eighteen years since, and my intention was to have a metallic table of strong, well-stretched rods, over which I would have placed a

metallic rail along the two sides longitudinally, running east and west; this rail about a foot above the table; and on this I would have worked a roller covered with canvass, something after the manner of carriages on a railway; the canvass rolled along every afternoon through September, and until the fruit was gathered, and again through the spring, to retard frost, and then to protect. This plan was, however, thought too expensive, and fell through, and I was obliged to have recourse to hobs driven in—rough stakes in the form of the letter V &c.,—and thus things proceeded, the sticks, of course, requiring almost annual renewal.

This mode, or something close to it, I fairly broached in "Loudon's Magazine," and strongly advised some of our market gardeners to lay down an acre or more at once, on a similar principle; had they done so in those days, they would, I am persuaded, have found it a profitable investment, and we should scarcely have heard of Orchard-houses. I wish I could even now cause my voice to be heard on this subject, for assuredly our Pear culture, in the main, is quite unworthy the age we live in.

I had, about twenty-two years ago, planted a border 240 feet in length, somewhat in accordance with those principles connected with root-and-branch culture, which had long been lurking in my mind, and which I have continually (my opponents may say, pertinaciously) adhered to up to the present moment.

These were a sort of "wood note wild," a sort of off-hand guess, but quite excusable in the position of affairs at that period, at which the complaints about barren wall-fruit-trees, espaliers, and, indeed, all but those of our good old orchards (which had escaped a coddling system), were to be heard on all sides. This line of Pears, however, though a first attempt, has turned out very well, on the whole; quite sufficient, I am told, to justify the adoption of a dwarfing system—albeit, a coarse beginning.

I must here observe, that I have coined a term or two expressive of the modes of training adopted; a course which no man is more unwilling to pursue than myself, but, nevertheless, a necessity, inasmuch as we have no existing mode of expressing the practice.

The *umbrella mode* will be readily conceived by those who have not seen it in practice; in form, and even size, the trees may be aptly enough compared to the skeleton of a huge gig umbrella, but even a little larger still. The stems (or umbrella-handles, shall we call them?) being about four feet high, and the leading branches touching the ground within nine inches. These, for lack of proper frame-work of rods, are supported by the V stakes before described. It may here, however, be observed, that these trees, having been about a score years under training, are so sturdy, that the boughs, in the main, carry their own weight readily. I have umbrella-trees here, no bigger than a gig umbrella, which measure inches around the trunk; they are singular-looking things, and look as if it would require no small amount of power to topple them over.

The mode for which I have coined the term *horizontal-radiate*, was the first experiment in the horizontal way with me. A border, five feet wide, being set out, the trees were planted down the centre at about fourteen feet apart, and the main branches were then trained in a radiate way from the centre, and horizontally at about a foot above the ground-level; it will be here seen that there is an identity of principle between this plan and the table trellis before described; indeed, this may be better termed *radiating table-training*, the other, *parallel table-training*, and so forth. Our ingenuous readers will, doubtless, pardon me for being a little "fussy" over the affair, for I must needs be explicit; this being the last time, in all probability, in which it will be requisite to be so special in detail, although I dare

scarcely say, as our histrionic gentlemen sometimes do—"The last time of performance in this character, &c." If any one is to blame, it is my very clever and worthy coadjutor, Mr. Fish, who fairly challenged me to an explanation of the whereabouts in Pear culture.

The *balloon form*, as some have termed it, is not well characterised by that term; it is neither more nor less than two or three stories high of umbrellas, one above the other, and each, of course, having, as all good umbrellas should have, a proper length of handle. I do not commend these gim-cracks or horticultural vagaries, neither do I condemn them, for I have had a tolerable share of success with such whimsies; they are the mere offsprings of a sort of inventive mania entertained many years since. However, it becomes a duty, now that I have fairly broken the ice, to point to the merits and demerits of all that I am acquainted with. I may observe, that I have a *Marie Louise* tree in this character, and it has been a marvel to all who have seen it; three stories high, and laden with those fine Jargonelle-looking fellows, like the ornaments dangling around a Chinese Pagoda. This *Marie Louise* has three of these umbrellas, each gradually diminishing in size upwards, so that it might almost be termed a creeping pyramid; it has, altogether, a very handsome appearance.

The *curved-parallel* mode on the walls has only one advantage over ordinary fan training, as far as I am aware, and that is, light is admitted *more equally* to all portions of the tree. In this respect, ordinary fan training has ever a slight defect. The main shoots, in this curved-parallel mode, start from a common centre, as in fan training, that centre about a foot or little more above the mere collar. They are forced into a curvature at about half a yard from the point of radiation, and then fall in with the courses of brick-work, observing horizontal lines at the distance of three courses apart.

A mode of training adopted at the Royal Gardens, Frogmore, is worthy of notice here. Many of the Pears, when I was last there, were trained over metallic *arches* of about four or five feet high, and, perhaps, five feet diameter at the base; as, however, I speak from memory, I may be slightly in error as to measurements, but that will not interfere with the principle. These are, I think, of an elliptic rather than a circular form, and are composed of parallel wires stretched, I believe, horizontally. Now, these I should have no objection to if running north and south; but as to their running east and west, I should, most decidedly, object to them, for they must, in that case, have a north or shady side, and it really will not do to advocate shade to forcing Pears; if so, there should be an end of all talk about tenderness. If I were establishing a new garden, I think I should use this form along the north and south lines, and the table trellis along the east and west lines; this would be a very interesting and useful arrangement.

Arcades of Pears along garden walks have been recommended, and, no doubt, look very agreeable when full of fruit, but they can scarcely be recommended, on the score of principle, for our tender kinds. But there are many kinds for which this mode would be suitable enough, and those intending to adopt it should be very careful how they make their selection.

As for *pyramidal* trees, everybody knows that they are very handsome, and, in the main, succeed very well; but in my opinion the table trellis will be found much superior as to warmth; the branches being all within a foot of the soil must be admitted to be in a warmer position than those higher up, especially if the ground beneath were covered with slates, and the shoots so trained as to permit the solar rays to heat the slates.

Besides, I think it will be found, that by some such plan as I have suggested, the table trellis may be covered and uncovered with greater facility than most

other forms; and this of itself is no mean recommendation.

In due time, I will proceed to examine other portions of this interesting, though somewhat perplexing, subject.
R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—MARCH 7, 1854.

THE newest plant, and one of the prettiest greenhouse plants that has been introduced for a long time, was exhibited here to-day by two nurserymen, in two forms, diametrically opposed to each other; the one, the most miserable, scrubby, three-parts-starved-looking thing you ever saw; and the other, the most healthy-looking plant that has been publicly shown in England these ten years past. When one has an entirely new plant, it is right and lawful to exhibit it, even if it were half-dead at the time, for practical men know, full well, that it is not always the healthiest and best-looking plant among a lot of new seedlings that is the likeliest of them to flower. so we make allowance for the looks at the first start; but no such allowance was needed on this occasion, as the two growers are, by common consent, allowed to be the most successful growers, of their line, in all England, namely, the Messrs. Veitch, of Exeter and Chelsea, and Messrs. Henderson, of the Pine-Apple Nursery, where Mr. Appleby used to tend the Orchids. I once had the ugliest and worst-grown plant but one in England, but it was never shown before, and I beat Mrs. Lawrence with it out-and-out on the very same table, and got a Knightian Medal for it. The plant was *Tweedia cœrulea*, and the new plant to-day is called *Acacia Drummondii*, a New Holland plant, and the very best of the race, far superior to *grandis*, or any of the "new Acacias" we have heard of for years. Now, as this plant must soon get into all parts of England, Ireland, and Scotland, to the Continent, and to North America, as the best pot dwarf *Acacia*, on the authority of THE COTTAGE GARDENER, I must describe it, as I am convinced, in my own mind, that it is *constitutionally* a better seedling to grow than its fellow shown as above. Indeed, I tried to convince the best botanist in England that the two are two distinct species, but he would not have them so. The leaves, shoots, and style of growth of this *Acacia*, are just as if it were a cross seedling between *Coronilla glauca* and *Cytisus ramosus*, and that the *Cytisus* changed the hue and reduced the leaves of the *Coronilla*. The flowers are on cylinders, or cylindrical, and the footstalk of each cylinder is an inch or more in length, making it the more graceful. It was sent by Mr. Veitch, who had a good prize for it, and who also sent a new, or newish, *Boronia*, called *Drummondii*, a delicate-looking plant, with large, bright pink flowers; also *Sarracenia purpurea*, in good order. Mr. Hume, not the M.P., but the gardener to R. Hanbury, Esq., of the Poles, near Ware, sent a very beautiful, and very scarce, I believe, *Cymbidium*, called *eburneum*, with large, white, waxy flowers, and two on a scape. It seemed an excellent plant to grow, so that an amateur might try it without fear. The Messrs. Rollinson, of Tooting, sent a new *Lycaste*, a droll-looking flower, the sepals rolling back, showing a greenish tinge, blotched, and shaded with brown, and the petals whitish, and blotched and shaded like the others, but with purple instead of brown. This *Lycaste* was just beginning to grow, so that it may, probably, be had in flower from February to May, or, perhaps, in the autumn, for it is worth while bearing in mind that a great number of bulbs,—*Hippeastras*, for instance,—and a great many Orchids, *flower shortly after a long rest*, and, therefore, that many such can be had in flower any month of the twelve, by first arrang-

ing the times of growth and of rest. The Messrs. Henderson sent a good plant of *Brachysema acuminata*, with the flowers all ready to open, when they are of a rich crimson-scarlet. This is really a good greenhouse plant, that seems easy to grow and look well; they also sent *Bilbergia iridiflora*, one of those young Pine-apple-looking plants which are so conspicuous from the bright scarlet bracts which accompany the flowers; and a very healthy young plant of *Franciscea confertiflora*, in good bloom, together with the *Acacia Drummondii*, which, I believe, is quite a different thing from the one exhibited by Mr. Veitch. Also, a very large plant that would come in well to fill up a corner of a room when company, or a ball, or wedding, was expected: this is called *Conoclinium ianthemum*; it was three feet high, and four feet in diameter; the flowers are in large heads on the tops of the branches, looking as if they were a cross between the blue *Ageratum* and a purplish Colts-foot (*Tussilago*), or bluish, with a tinge of purple; most of the branches were cut-in last year to eighteen inches, their bottoms are now quite hard wood, and the new top parts are soft-wooded, and looking as if all the plant ought to be as soft as they. By a system of growing this plant as they do young Hydrangeas, for one large head to a pot, it can be had in bloom in a three-inch pot, and, I believe, a little plant, with a big head in this way, which I saw on the table, was from the garden of the Society. At any rate, there it was to prove the fact, which is well worth keeping in mind, as any flower you can stick in a little vase on the corner of the mantelpiece, when friends come in for the evening in winter, is as good as a prize plant in May or June. For the same reason, people ought now to push on duplicate plants of as many of the dwarf *Acacias* as they can get room for; get them through with their flowering as quickly as possible; then prune them in as close as a Cabbage Rose; force them to make a quick growth, by keeping them close and a little warmer than a greenhouse till the middle or end of May; put them out-of-doors after the turn of Midsummer, and in the full sun, if they can stand it, or as soon as they can; not to leave them out too long in September, and they will be in bloom for the rooms, or conservatory, early in the new year; and by going through the same process in 1855, but two months sooner, they would be ready for a gentle forcing early in November, to come in with the first Camellias and Chinese Azaleas, and in the very middle of the Chrysanthemums in their season. I never saw this class better done in this style than by my successor at Shrubland Park, last autumn, the pots standing on a bed of white sand, but not plunged, which was in favour of their ripening so well, and of their being so abundantly in bloom-bud. The *Azalea squamata* I mentioned the other day, would freely yield to this treatment and make a change of tint among the usual flowers which come in before Christmas.

It is a great misfortune that most of the old *Acacias* from the Cape get so soon to be such trees and bushes that few can find room for them, as they could be brought in just the same as the new race from New Holland, and they are more varied in their leaves and style of growth; that is what I was thinking of, on seeing two very nice plants of the old *Acacia longifolia* from the collection of the Society. I think they were only in No. 24 pots, but they were six or seven feet high, wide in proportion, and clothed down to the pot; they were also in such profusion of bloom, that if I could but add new to them, I would run them up higher than even *Drummondii*. All we can do with these Cape *Acacias* is to keep a succession of young plants of them, and cramp them at the roots in small pots, and keep stopping them from May to September. When they get too big for us, let them be planted out-of-doors in May, and take their chance. They often escape in mild

winters; but, what is better than all, everybody can grow them. Among the high nobility, *Acacias* have become very fashionable within the last ten years; but as they come in when few people are about visiting large places, the great bulk of our plant people think they are too common for them to grow; so there is a fashion in flowers as in bonnets and dresses.

A fine, large plant of the now *Cytisus ramosus* was shown by the Society under the first name by which it was known, *Genista rhodopneæ*, and their old *Trymalium odoratissimum* is now, probably, the best plant of it in Europe. It may be about five feet high, trained to a circular trellis, and not hard pruned, which is the great secret of its health and profuse flowering. Then, how is a plant, which grows and flowers exactly like *Ceanothus azureus*, made to bloom without being cut-in very close every year after flowering? Just as they manage that same *Ceanothus* at Shrubland Park; when it reached the top of the wall they merely thin out the old branches, and train down the young wood over the old parts, cutting off the points, here and there, when they are not thoroughly ripened.

The crimson-flowered *Azalea obtusa* was in this collection; also *Epacris lineata*, a light pink; *Epacris ardentissima*, a fine crimson; a very fine hybrid *Begonia*, a seedling from *hydrocotylifolia*, stronger in all the parts than that species; I forget the other parent, but it is not *manicata*, as was first given out. Some one had made a mistake in that cross; a large plant of *Dielytra spectabilis*, with better coloured flowers than is usually seen in forced plants of it; this is now, beyond a doubt, perfectly hardy, but no flower suffers so much from the least over-heating. *Azalea ramentacea*, another of Mr. Fortune's new China ones, a very dwarf, white-flowering kind, with thicker leaves than any of the old breed, and in that respect would improve the leaves of any of our white seedlings, and would also give them a more compact mode of growth. A magnificent cut plant of *Acacia lineata*, which has a close way of growth, with *Pultenea retusa*, full of pea-flowers, which are mostly yellow, and the best varieties of the Chinese Primrose, in sections of double flowers, with plain and fringed sorts. Also a large plant of the beautiful evergreen, hardy *Berberis Darwinii*, from a cold frame. It was a yard high, in a No. 16 pot, and very gay it was; and last of all, *Echeveria obtusa*, which deserves to be a window plant, and is all but hardy.

Of Fruits, we had only three fine bunches of the *Muscot* of Alexandria Grapes, turning into raisins, as they mostly do at this late season, but otherwise in good condition for table; with some pots of Cuthill's *Black Prince Strawberry*, in 48-sized pots, but not done well; and Mr. Solomons spoiled a dish of Strawberries, which he sent from Covent Garden, by mixing *Keen's Seedlings* with the *Black Prince* in the same dish.

Thomas Good and Co., of South Audley-street, sent several rich-looking flower vases for rooms, stair-cases, &c., with stands, of different colours, forms, and workmanship, some of which were highly rich in colours—all had a good allowance for drainage. This class of vases is used by the great for holding plants in pots, which are changed as often as they get out of flower, or single specimens in pots. When there are more than one pot, some kind of stand is necessary to get up the rims of the pots to nearly the rims of each vase, and then to cover all the pots with green moss. One great error I have seen in this arrangement was to put a larger pot inside the vase than could be hid, giving one the idea that the pot was too big for the size of the vase, and if you pushed it farther down you must split the vase to pieces.

Of the most profitable timber, and of fancy timber, there were lots this time; and the subject seems to take uncommonly well among the lords of the soil, but ladies

are more cautious, and will not take to a thing, however new, until it becomes fashionable. The large plank of *Deodar* was lionized. Specimen plants of the *Cedar of Lebanon*, which were planted at Highclere in 1773, were sent by the Secretary of the Society, J. R. Gowen, Esq. A fine sample of the Douglas fir (*Abies Douglasii*), from Oregon. This wood is the best of all the Spruce Fir tribe, and is hardly second to that of the *Deodar* itself. A block of *Pinus insignis* showed that it is of no use, or likely to be here, except as a nurse plant, to keep up better trees of a slower growth. When it comes to be as plentiful and cheap as the common Spruce it will make a far better nurse, and it has begun already to bear cones in this country. This wood was sent by T. May Harding, Esq., of Upcott, near Barnstable. This Society would be pleased to receive more kinds of woods, specimens of British growth, as the Fellows have taken such interest in the question of profitable planting; and after a season such specimens could be returned. The fact is, this agitation about the mismanagement of the national forests has opened the eyes of a new generation of planters, and the end will be, that every new tree, and every untried timber of home growth, will be scanned and criticised till the pounds, shillings, and pence value of each is as well understood as the planting of the seedlings. We had, also, good specimens of the *American Larch*, or Hackmatack-tree, which does no good here. Also of the Corsican Pine (*Pinus Laricio*); but a specimen before us of the great Alerce wood of the old Spaniards, if not of the Moors, is, probably, the very best wood among all the Conifers. No one could make out what tree produced the Alerce for ages, or where it grew. The Moors introduced it, and, probably, had forests of it in Spain, although the latter is doubtful, from no mention being of it in a book written by a Moor in the twelfth century. This old Moor was no fool of a gardener, for he treats of all the trees and shrubs in Spain, and also how to transplant large trees as well as Harry Moor at this present day, but he makes no mention of Alerce-trees. Surely, such a good forester, however, would know the tree and wood most prized by his countrymen, and of which they roofed their temples, which we know to have resisted all weathers, during nine centuries, without a bit of paint. It was only nearly twenty years ago that we found out, through this Society, what the Alerce really is. Mr. Drummond, our Consul at Tangier, traced out the origin of Alerce wood to be a tree which is very common in Barbary and the Atlas range. It is of the *Arbor Vitæ* kind, and is now called *Callitris quadrivalvis*, alias *Thuja articulata*, or the *Sandarack* of Mount Atlas. He sent some of them to the Society, and we had it for examination and comparison to-day. Unfortunately, it will not do for foresting in this country, being too tender for the climate; yet, if we may put faith in the Spaniards, who went over and conquered Peru and the countries to the south of it, we have just as good Alerce wood as that of Barbary in the Alerce of Chili, either *Libocedrus tetragona* and *Libocedrus Chilensis*, or both, and both are as hardy as the Common Larch, and grow to a much larger timber. Then it follows, like A. B. C., that the Chilian Alerce is a powerful rival to the Indian *Deodar* and to the Oregon Fir of Douglas, if not superior to both, and that both are superior to the Larch, particularly the Douglas Fir, which will not warp or shrink under the most severe trials. At all events, that is about the marrow of the lecture, as far as my memory carries me, for the room was so full that I could not use my pencil where I sat.

D. BEATON.

KEEPING, PROPAGATING, AND BEDDING DAHLIAS.

A NUMBER of complaints have reached me this spring, that the Dahlias, though secured from frost, have kept very badly. It is too late to resort to preventive measures now for this season, and yet it may be a gratification for those who have been disappointed to know some of the causes of failure, that they may be guarded against in future years. One complains, that after securing them as carefully as Potatoes in a place not over dry, that many of the roots are completely decomposed; another finds that the roots have no substance, but are regularly mummy-dried; and a third finds, that though the bulk of the tubers are seemingly sound enough, the collar of the plant is so far gone that no coaxings of heat or moisture can induce a bud to break; while a fourth says, that though all his plants seem sound, no young shoots seem inclined to come. The first and second of these evils are generally attributable to unsuitable treatment of the tubers before storing; the third is generally the result of frost getting at the collar of the plant before it is taken out of the ground; and the fourth, when it does occur, is often due to a certain mode of propagating, which may be guarded against now, and which, though detrimental to some sorts, exerts no prejudicial influence on others, but which it is well to guard against in all.

The three first causes of failure may be guarded against by a very simple process, namely, going round the Dahlias as soon as frost is anticipated, and piling old tan, litter, or even the earth of the bed, which I generally use, round the stems of the plants, in little mounds, from six to twelve inches in height. This secures the collar of the plant from being injured by frost. After this, I prefer that the plants should stand in the ground until the tops are quite blackened by frost. The stems are then cut off about fifteen inches from the ground, and if more frost is at all apprehended, the top of the plant is laid over the roots, the part of the stem left being bent so as to prevent water entering and lodging there. If the plants are extra luxuriant, and the frost long in coming, previously to placing the mounds over the tubers a spade is inserted round the plant so as to cut many of the fibres, and thus check the rampant luxuriance. I prefer letting the tops stand until destroyed by frost to cutting them when at all green, because the cold nights, and the slight frosts that generally precede a cutting-down one, will have gradually checked luxuriance, and thrown more of a ripening influence into the tubers. In either of these cases, protected as I have mentioned, I would wish the roots to receive a farther ripening by their remaining in the ground eight days or a fortnight after being cut down. If the frost, however, came too severe for the roots to remain in the ground with safety, and any covering with litter was deemed inadvisable, I would give the roots a similar advantage by lifting them with as many fibres as possible, and with what earth would adhere to them, and allow them thus to remain in a shed, the floor of a house, &c., where they would not dry too quickly, and thus the roots would be more gradually and thoroughly matured, and nothing of the sudden change experienced as would be realised by cutting down the green stems and storing the roots away at once. Whenever the roots are brought in-doors they should first be turned topsy-turvy, that every particle of moisture in the old stems left may be turned out. When thus left for a week or a fortnight, the old stems may be cut close, a part of the earth removed from the roots, and the tubers placed in any position, neither wet nor dry, and where frost will be thoroughly excluded. Small copper wire is about the

best material for securing tallies to the roots when the latter are placed in dry earth, sand, &c.

A few examples frequently give a better lesson than the most valuable directions. I knew an amateur, who told me, every summer, for some years, that he must send his best Dahlias for me to winter for him; but, somehow or other, they never came; and I know that for a number of years he had to get every plant from his nurseryman. I recollect, when pitting Dahlias, as used to be done with Potatoes, was all the rage, and no bad plan it is, that one gardener did not lose a single root, while another had scarcely a live tuber in his collection, though both had been equally secured against frost. In the latter case, the plants had been cut down when the tops were merely a little frosted, the tubers taken up, beautiful and fresh they looked, well cleaned from earth, properly named, and packed into their winter quarters at once, receiving a covering of straw and earth sufficient to secure them from frost. Of course, the roots were full of watery juices; there was little chance for these escaping, and fermentation and rotteness ensued. The first-named were treated as advised above, and afterwards stood for the best part of a month in a shed, exposed during fine days, and with a little protection in cold nights, before being pitted, and nothing could have answered better.

An amateur friend, who will not be at all offended when he sees this, some years ago obtained, at great expense, a collection of the choicest and newest Dahlias, and, no doubt for the double purpose of serving himself and testifying his respect for me, he proposed that I should get the tubers in winter or spring, start them into growth, get one or two plants of a sort for him, and plant the others remaining as I deemed proper. I saw nothing of the tubers until, I think, towards the end of February, and what a sight! They were worse than mummies, nothing but the skin being left. I had them wrapped in moss slightly damp, gave increase of temperature by degrees, did everything I could to swell the dried up tuber by degrees, but, after all, only two or three sickly plants could be obtained out of what the previous year cost the best part of a ten pound note. I knew whenever I saw them how they had been managed. My friend told me that he went out and found the foliage one night as stiff as a poker with frost. He was anxious to save his favourites, forthwith summoned his trusty man Friday, cut down the stems level with the surface, hoisted, with the help of a fork and the light of a lantern, as far as I remember, all the tubers out of the ground, and transferred them at once to the floor of his greenhouse, that floor being paved, and to a position on it near the flue, where they had remained until packed and brought to me. Here the treatment was different, to a very extreme, as contrasted with the case of pitting at once; but the two extremes met in producing a common disappointment, though varied in its appearance; the watery juices, in the one case, producing putrefaction and rotteness; and the too free exhalation of them, in the other, leaving nothing but a mummy skin behind. If the plants of our friend had remained longer in the ground, or if, when taken up thus suddenly, the roots, carefully moved, had been packed in *dryish* earth (not dusty dry) on the floor of the house, and at a distance from the flue, the disaster would not have been so likely to happen.

One case more. Two years ago, reports reached me, from various quarters, of the splendid effect produced by the dwarf Dahlia *Zelinda*, when grown in rows and beds; and I was promised, in several cases, a good supply, if I would only go for them. I had known the Dahlia years before and thought but little of it, having only seen it with others, and in solitary specimens in borders. I saw the first rows of it a twelve-month past, last autumn. The able gardener in

that princely establishment whence my supply was promised, on the principle, that "a bird in the hand is worth two in the bush," offered me and my companion some plants each, as he would soon be taking them up, the frost having just touched a few of the upper leaves that morning, and, without more ado, turned out a-half-a-dozen of roots for us. I carried them carefully home, potted them the next day, kept them neither moist nor dry, and in a temperature of from 40° to 45° during the winter, placed them in a higher temperature in the middle of February, and kept wondering and wondering how no vegetation was appearing, and on turning them out of the pot, I found the skin dying, and the interior of the tuber either wholly dried up, or like a mass of light rotten wood. I was rather chagrined, after all my labour, to have only this return; but I did not feel justified in attributing it altogether to the immaturity of the tubers, until, on writing to the friend that accompanied me, I learned that his roots had served him in the same way.

From these facts, it may be inferred that a sudden check to the roots, by cutting away the top when yet green and flourishing, is injurious to the keeping properties of the root; and that even when cut down with frost, it is advisable to allow the root to remain somewhat longer in the soil, in order that it may be more matured; and that this happens in the circumstances, is so far evident that roots so prepared seldom go wrong afterwards, if secured from frost, and if packed, or unpacked, in any other material, such as earth, sand, or moss, &c., are not exposed to the extremes of great dryness or much moisture.

After what has been said lately on *propagating*, I need not here enter upon the propagation of desirable kinds of Dahlias. The tubers are generally placed in a sweet hotbed, not over warm; and when the young shoots are from three to four inches long they are slipped off with a heel from the tuber, or the shoot is cut at a joint when it is desirable to get as many plants as possible, as the joints left below the cutting removed may be expected to yield each one or two cuttings. These cuttings are placed in light sandy soil, and inserted in the hotbed, when, if all goes well, they will soon strike root. Now, the peculiar mode of propagating to which I referred, is the not only cutting across at a joint, and removing the leaves there, but slipping down the knife on each side when doing so, and thus reviving not only the leaves but the buds in their axils; and in some sorts it has been found, that when this is done you may have a large, fine tuber in autumn, but no buds and shoots from it in spring. It is preferable, therefore, to have one or both of these buds at the base of the cutting when it is thus cut through at a joint. So thoroughly are first-rate *Dahlia* growers convinced of the truth of this, that when they purchase a desirable and expensive novelty they do not like to depend upon that plant for stock the following year; but as soon as the plant begins to grow freely they slip off a few of the first side-shoots, when yet hard and stubby, before they have acquired much succulence; they make these into cuttings, leaving the bottom buds, and striking them, and growing them; and though they do not bloom that season, they furnish a stock of fine, healthy, small tubers for the ensuing year.

Of *Bedding-out Dahlias*, I have seen several tried, and others recommended, that have answered with more or less success. The *Scarlet Zelinda* is a very fair thing, but the *Purple Zelinda*, though a poor thing, individually, in a florist's eyes, makes a splendid appearance either in a bed or row. Foiled as respects those I had carried home from such a distance, I applied to, and received a few from, Mr. Gardener last spring. I am almost afraid to speak of the temperature to which they were subjected, and the railroad pace at which they were

made to afford cuttings, and then got into rattling, robust plants before the end of May. I rather think we exceeded the *high* temperature mentioned by Mr. Beaton, the other week, for propagating soft-wooded plants in spring. At any rate, I had a row and some beds that were the admiration of everyone. The plants, on an average, ranged from fifteen to eighteen inches in height, were planted from eighteen inches to two feet apart, and were a dense mass of purple colour. So close and level were the flowers, for about ten weeks there was scarcely an opening left in which you could insert a couple of fingers. Many, on seeing them at a little distance, exclaimed, "whole beds of Cockscombs." They were, unquestionably, the finest feature in the gardens here, either in beds contrasted with yellow, or flanked with yellow in the row. I give them this prominent notice for three reasons: First.—It is a general idea that Dahlias, when extra stimulated for propagating, and being often and often cut in, do not do much good for that season. Be this as it may, these dwarf *Zelindas* were over stimulated, and no mistake, and every plant was smothered with bloom. Mr. Gardener would not believe scarcely that what he saw were the produce of what he sent. There is no difficulty in getting into a stock, therefore. Secondly.—Many applications have been made for roots, which I have, so far, satisfied; but there are many more which, with a due regard to a home supply, I have been unable to meet; and several inquiries have been made by nurserymen and ladies as to where it is to be obtained for sale; and as I know it was mentioned in *THE COTTAGE GARDENER* years ago, I thought some of the readers might have a stock to dispose of. And thirdly.—To draw attention to dwarf early-flowering Dahlias, as a new feature for masses in the flower-garden.

No doubt, just as in the case of the *Zelinda*, there are many that have been neglected, because they were never tried as a mass. In addition to the *Scarlet Zelinda*, there is a nice dwarf, Orange-variegated variety, *Miss Weyland*, from two to two-and-a-half feet in height, and in rather poor soil, was not above twenty inches last year, that would make no bad neighbour for the Red and Purple *Zelindas*, but with me it has been rather a miffy thing, and seems the only desirable, this season, in the Dahlia way, that will move the wrong way. We had a small flowering variety, nearly of the same colour, last season, (*Mrs. Labouchere*), which might do for a taller bed. Our plant was from two-and-a-half to three feet high, and smothered with small flowers. I have mentioned that the flower of the *Zelinda* is such that a florist would never look at, but the habit might be retained, and the form be improved. I tried a little hybridising last summer, but did not succeed in getting a single seed. So compact and stubby were the plants, that they were almost the only plants in the garden that had neither pegging or supporting of any kind. R. FISH.

THE CEDEUS DEODORA VERSUS THE CEDRUS LEBANI.

A CONSIDERABLE amount of botanical acumen has been used pro and con to find out whether these two remarkable trees are or are not the same species; some asserting that the Deodar is only a variety of the, in this country, more anciently known Cedar of Lebanon. I shall not enter into the merits or demerits of the arguments that have been advanced by the advocates of either opinion, sufficient for me, and, I opine, for all the readers of *THE COTTAGE GARDENER*, is the fact that no one, even the most superficial observer, will ever mistake the one for the other; and another no less weighty fact is, that seedlings of each tree always come

true, whereas, if the Deodar was only a variety of the Cedar of Lebanon, seedlings of the former would sometimes revert to a likeness of the original—a circumstance that I never could learn has even in the slightest degree been observed.

It is not, however, of such great importance, excepting in a botanical point of view, whether the one is a variety of the other or not. The grand points to be considered are, does the wood or timber of the Deodar last long?—Is it adapted for use, and is the tree hardy enough to bear the coldest of our winters?—and, lastly, will the wood be of as good quality grown here as it is said to be in its native country?

As the Commissioners of Woods and Forests are about to plant several thousands of the Deodar in our national forests, these questions are of great interest and importance to the people of Great Britain.

At the recent Horticultural Society's Meeting in Regent-street, both the Chairman (Dr. Royle), who resided for several years in India, and Dr. Lindley, spoke for a considerable time on this very subject, and as our readers are aware, thanks to my good friend, Mr. Beaton, that I was there, and he said "taking notes," I will try to give the substance of what fell from these two learned and scientific gentlemen, first stating, that most writers that have travelled in the parts of the Himalaya Mountains where the Deodars form extensive woods say that the timber is more highly valued than that of any other tree, and that well authenticated facts prove that timber from this tree has been used for the construction of temples built several hundred years and still remains good, and that the grain of the timber is close, compact, and easily worked, and is capable of a very high polish.

My second question—Is the tree hardy? is easily answered satisfactorily. We here have had it in cultivation more than twenty years in various situations, and it has passed through the ordeal almost unscathed.

The last question is more difficult, because it is a question of time, and can only be proved by analogy. Dr. Royle stated to the meeting that "the Deodar grows in regions from 5000 to 12,000 feet above the level of the sea, in which regions the weather is often very cold and varied," just such a climate as the hills of Derbyshire or the highlands of Scotland. Now, if the timber in the Himalayas in such a climate is excellent, why should it not be so in a similar climate in this country? The learned doctor gave it as his decided opinion that it would, and his opinion, he said, was confirmed in a letter he read from Mr. Wilson Saunders, of Lloyds, who stated that the wood of the Deodar was superior to the American Larch. The Doctor farther stated, that it had been argued that because the wood of the Cedar of Lebanon, grown in this country, is not so good as that grown in Palestine, that, therefore, the wood of the Deodar would also be inferior. This argument he considered to be erroneous, because ancient descriptions of the excellence of the timber of the Cedar of that country did not necessarily refer to it, but might refer to other cone-bearing timber trees.

Dr. Lindley judiciously followed up the remarks of the Chairman, and showed examples of the Cedar of Lebanon grown in this country, and pointed out some differences in the wood to prove the two trees were of a different species. The wood of the Lebanon Cedar is inodorous, whilst the wood of the Deodar is highly fragrant; a fact that any one in the room might easily prove by smelling at the two woods, for there was in the room a splendid specimen of the Deodar timber, a plank or board imported by the East India Company, which measured four feet six inches across, and eighteen feet long, and very nearly five inches thick. I could smell the odour of this wood very perceptibly, and the

Doctor said, when it was being planed the scent was very powerful indeed.

After all this evidence, I think the three questions I proposed to discuss are answered satisfactorily to every unprejudiced mind, and though I am now in years, I hope yet to live to see the day when many of our hills will be covered with this elegant, and, I may now add, useful timber tree.

There is a great similarity in this tree to our common Larch; so much so, that when it was first introduced many nurserymen propagated it by grafting on the Larch, but I have not seen any fine trees so treated. Seed is now imported largely, and, therefore, any other mode of propagating it, except by seed, is futile.

It is, however, like the Larch in one point, it will grow and thrive in exactly similar soil and situation suitable for that useful tree, and has the advantage of being evergreen, and thus far no insects have preyed upon it as they do on the Larch.

T. APPLEY.

THE ANTIRRHINUM.

(Continued from page 461.)

General Management in the Border.—This paper will be the concluding one on the culture of this favourite flower—a flower more worthy of cultivation generally than many are aware of. I think, if any of our readers would pay as much attention to its culture, and the improvement of the varieties we already possess, as has been paid to the Auricula, Carnation, or Hollyhock, the care bestowed would be well rewarded.

As I said before, it has the advantage of being perfectly hardy, and will, in dry soils, live several years, if not allowed to bloom too long, or produce a full crop of seed. I have, in former papers, described pretty fully how to improve the varieties by seed; how to propagate them by cuttings; and, lastly, the best method to grow and exhibit them in pots; and now it only remains for me to describe its culture in the bed or border. There would be no objection to exhibit cut blooms in collections of eight or twelve dissimilar blooms, and three spikes of each variety would make a better show than only one. Growing in a well-prepared bed, these spikes of flowers would be finer than those in pots, at least, in length of spike, and most probably in the size of the individual flowers. Of course, there should be prizes offered for seedlings, and these should be shown separately, like all other seedlings.

To grow them well in the border, it should be duly prepared to receive the plants early in the autumn. Choose an open situation, but, if possible, sheltered at a distance from the north and west winds. Mark out the bed three feet wide, and if the situation be low and wet let it be well drained. Throw out the soil on each side of the bed, and place a layer of brick rubble at the bottom, three or four inches thick; upon that place a covering of the most convenient material on hand; thin turf, the grassy side downwards, is the best, but old thatch, or strawy litter, or even small twigs of trees would answer the purpose, which is to prevent the soil choking up the drainage. Then mix the soil, if tolerably good, with some well-decomposed manure, or vegetable mould, and some road scrapings, and sifted lime rubbish; the materials to be added amounting altogether to about one-eighth of the soil. If the latter is bad, remove it altogether, and bring in some sound fresh loam. When the materials are duly mixed with the soil, then cast it into the bed, using as much as will raise it six inches above the surrounding level.

If the cultivator has any kind of edgings the bed will look neater, and the soil will be kept quite distinct from the walk. Mr. Hogg's edgings answer this purpose,

perhaps, the best of any, but slate, or even boards, nailed at intervals to short posts, will form neat temporary edgings. Avoid Box, or any kind of living edgings, they are the receptacle or hiding place for slugs, &c., besides impoverishing the soil. The bed being thus prepared and formed, let it remain in a rough state for a month or six weeks to settle.

The best time for planting is the beginning of October. I consider this season the best for several reasons; first, because the plants are so hardy that no frost will destroy them in such a dry, well-prepared bed; secondly, the plants, if kept in pots through the winter, have the roots so cramped that they cannot spread out sufficiently when planted in the spring; and lastly, there are so many things requiring protection through the winter, that space can be ill afforded to any plants that do not need such shelter.

Choose a dry day for the operation of planting, and take care to have the plants tolerably strong at the time; then place them on the bed in their separate sorts; that is, if the cultivator has three or four of each variety, plant them altogether, to prevent confusion, allowing six inches square to each plant. Have some kind of labels to each sort, either legibly named in full, or numbered, commencing with No. 1, and so on, till the bed is full, the numbers corresponding with the numbers and names in the garden book. When all are planted, level the bed between the plants, and they will require no further care till the spring. As soon as the winter is passed, examine the plants, and press any down that the frost may have lifted up; clear away all weeds, and stir up the surface of the soil with a small fork. This will encourage the plants greatly by allowing the spring rains to penetrate the soil, as well as admitting the warm spring atmosphere to enter the soil more freely. As the plants advance in growth, it will be necessary to thin the shoots when they are too numerous. This thinning must be regulated in proportion to the strength of each individual plant; weak plants should only have two or three flowering shoots left, but strong ones may have four or five. Just before the blooms expand each spike should have a stick placed and tied to it to prevent the winds from breaking it off. When in full bloom, a covering of hoops and canvass, if handy, would greatly prolong the bloom, besides sheltering it from the sun and heavy splashing rains.

If it is desired to have a long season of bloom, cut down the first flowering spikes before seed is formed, then fresh flower-spikes will push forth from the base of each plant, and there will be a succession of bloom.

The finest flowers will always be produced on young plants; therefore, whoever wishes to excel in blooms should renew his bed and plants annually.

T. APPLEY.

PEAS FOR FIRST AND SECOND CROPS.

Of late a great outcry has been raised against White Peas of all kinds, unless it be some of the very large ones; this denunciation on the part of those whose province it is to direct public opinion, is, doubtless, in many instances right, but I do not think it is so in every one, for the anxiety to procure Peas at the earliest possible day ensures them a hearty welcome, whether they belong to the White or Green section to which the family is divided. Neither do I think, at this early period, when they are gathered without the possibility of an old one being amongst them, that they are so much inferior to their "coloured brethren;" but supposing they are, do they not possess a greater amount of hardihood and the other properties which enhance their value as "a winter standing crop?" This, I believe, will not be denied; but the next view which I take of their

respective merits may, perhaps, be questioned; it is this—supposing the green or blue section possess greater table attractions than the white, is the policy a bad one which reserves the best one until a beginning has been made? as it is well known the first are welcomed in with that hearty good-will that those fine points of distinction which characterise one variety from another are not regarded with such scrutinising nicety as they will be after a while; and the taste is sometimes so fastidious, that a great benefit is derived by having a road open to improvement, which could not be the case if the best was served first; but as I have all along advised the sowing of one or other of the best white kinds, of which the *Charlton*, *Kent*, or *Early Frame* is the parent, for the first crop, but that the more esteemed ones at table might succeed them, it is needless saying any more on the subject than what is necessary to meet the individual cases of cultivators.

Peas, as an article for market, are largely grown in Kent and some other counties bordering the Metropolis. The plan there adopted is to sow them in drills, about two feet apart, in November, and about the end of April an intervening row of Swede Turnips is not unfrequently sown; this secondary crop is, of course, much trampled on by the picking and other work necessary with the first crop; still, it often struggles through, and a good produce is the result, but the Peas are, as might be expected, roughly handled; sticks, and other appliances common in gardens, are here disregarded, and the crop lying on its side is often roughly turned over to give up its treasure concealed beneath; this manner of doing it renders the latest kinds of little value for this purpose; but on the other hand, the very dwarf ones are as seldom grown either. The most productive ones are those which are about the size of the *Early Frame* and its compeers, but the kinds most grown are the *Kents* and the *Scimitar*. This latter is not much inferior to many of those with more pretensions; in fact, it may be called the parent of many of them; and how many "valuable kinds, with high astounding names," a bag of *Scimitars* may have furnished, is only known to those who have the mysteries of the trade at their finger ends. One thing is certain, the *Scimitar*, to this day, is a useful, good Pea; and though some have a better-filled pod, it is not to be despised for its accommodating qualities; but the amateur, who has but a limited space to dispose of for his Pea crop, and wants to make as much as he can of the ground it occupies, would do well to grow only the large or tall kinds, and by sowing them in rows of six or eight feet apart, Brocoli, or some other winter crop, might be planted between them, in July, in such a way as to occupy the whole space when the Peas are cleared away; and though the Brocoli plants may be much bruised and hurt by the trampling the ground receives, yet the season generally allows them time to recover themselves again, and good Brocoli, &c., is frequently obtained from ground that the preceding summer furnished abundance of Peas. This mixed-cropping-system is, however, not advisable in all cases; neither must the last sown ones be hampered by any intervening crop, for they will not be removed in time to allow the other an opportunity to rally and grow before winter sets in. Other crops, as well as that of the Cabbage tribe, are often planted in such places, many having their Celery shrouded by their Peas in summer; but this, as well as many other crops, is regulated by the circumstance of the case immediately in hand.

As it would not be just to close this subject without naming one or two varieties, which, in a usual way, may be depended on as good, I may say, that I have for some years depended on *Warner's Early Emperor* for the first crop, and the *Champion of England* and *British Queen* for the after ones, and though I have

generally grown others as well, these three are the kinds I depend upon for a supply, and it is generally forthcoming. Observe, they are all stuck at the proper time, and are, therefore, in a condition to bear to the full extent of their capabilities. The ground they are sown on being deeply tilled, the roots have access to a greater depth than the droughts of summer is likely to penetrate, and thus one great cause of mildew is removed, that bane to the autumn Pea crop in the south of England, from which our brethren in the north are, in a measure, exempt. The Pea also likes a generous soil, and though fresh and green manures may create a grossness of habit when it is accompanied by a showery, growing season as well, still, a considerable amount of enriching matter may be added prior to sowing the crop, and as much in a liquid state after as the place will allow of, bearing in mind, that where much produce is expected, much manure ought to be given; and there are few things more deserving of attention, for none are more generally esteemed at table, than a dish of nice Green Peas, so that nothing must be denied them calculated to ensure their well-being.

It will have been noticed, by all parties who had Peas sown in the usual way last autumn, how much later they were this year than last; mine, sown in the middle of November, were scarcely through the ground at the end of January; while, last year, they were nearly a foot high at that time; but then they were entirely destroyed by the frost and snow we had at the end of February, so that the second sowing, made about Christmas, came in first; but the present winter is widely different from the last, the early part of it being very severe; while, since the second week in January it has been all that could be desired for benefiting the ground, which certainly works better than at any similar period for some years. However, we may have a trying spring yet, so that it behoves us all to be on the alert, and leave nothing undone now that can be done, for the time is fast approaching when a variety of duties are equally pressing on the cultivator, that every thing which can expedite future operations ought to be brought into bearing now.

J. ROBSON.

ECONOMY OF THE FARM-YARD.

(Concluded from page 464.)

In the foregoing observations upon this subject, reference has been made to the best method of managing the Farm-yards, as formerly constructed, both as regards the making manure, and the shelter for cattle; it has also been stated what the advantages are which have been secured by some of those most recently constructed upon improved principles. But it has only had reference to those yards and steadings where partial covering has been attempted, namely, when sheds or boxes have been recommended in connection with open courts or byres, as well as open pits or receptacles for manure, &c.

It is now my intention to allude to the most recent, as well as the most approved, style of Farm-steadings, and which, in my opinion, will be found in every respect the most desirable and the most economical. I refer to covered Farm-steadings, that is to say, buildings so arranged and covered that every animal usually fed at the farmery may be kept under cover, and all the manure made under cover also. Now, this new principle of building, as I shall call it, possesses several of the most important features in the economy of the

Farm-yard, for it enables the cattle to be fed and accommodated, during both summer and winter, under cover, thus enjoying the advantages of an equable and proper temperature, and at the same time a perfectly pure atmosphere, quite unknown to any other style of Farm-buildings. The manure also manufactured by the cattle, when thus fed and lodged, must be of first-rate quality, there being no dilution by rain-water, nor any evaporation by exposure to the sun and wind. The most appropriate plans which I have seen, for the erection of buildings of this description, are those set forth in the twenty-third number of the Journal of the Royal Agricultural Society of England, by Mr. Fisher-Hobbs, and by Lord Kinnaird; and it would appear, from their statements upon the subject, that a saving of ten per cent. in the cost of erection is effected, as compared with former erections upon other principles; and this may be easily conceived, when it is considered that the roofing and outer boundary of the buildings are the most expensive part of the affair, the internal fittings being very simple and cheap, although very durable and effective; and it is in these internal barriers or divisions between the boxes, stalls, or cattle pounds, where the economy is obtained, for in buildings of another principle, the boundary walls or division of almost every compartment of the steadings involves the necessity of a wall, or fence, of a description necessary to afford warmth or shelter to the animals. I am not, however, wedded to the opinions of other parties in this matter; for I believe that the practice, as set forth in connection with the buildings above referred to may be much improved, particularly in the management of the manure; for instance, it is stated that drains are constructed for the purpose of carrying off the liquid-manure from the stalls, boxes, or cattle courts; but in case the principle of box accommodation was carried out entirely through the whole concern, there would be no liquid to drain away, it would be all absorbed by the earth placed at the bottom of the boxes, sties, &c.

Now this brings me to an important point;—if box-feeding, wherein the manure is allowed to accumulate under the animals, is the best and most economical system, why not carry it out in all its entirety; for in a covered home-stall there is no lack of room, nor is there an opposing obstacle of any kind. At any rate, I contend, that every animal ought to be accommodated in such a manner that no liquid-manure could escape or require drainage, and that the cattle, whether fattening beast, or dairy Cows, as well as Pigs, are best provided with boxes which have earth at the bottom, and littered with straw as required. In the case of Sheep, when house-fed they may be kept upon spars, or open boarded floors, or, otherwise, in littered-yards. The Horses, also, may be allowed boxes upon the above-named principle; but in case these are objected to, as they are by some, although, I believe, without good grounds, they may be treated as described in the former part of this paper, by earth-floors to the stalls, which will absorb and render quite innoxious the

liquid-manure. The system will then be carried out, and thus enable the whole of the animals upon the farm to be fed in a covered homestead, if required, with the full advantage of securing health and well-doing for the stock, or breeding and working animals, and the further gain of obtaining the largest amount of meat in return for the food consumed; and at the same time securing the greatest possible amount of manure of the best quality, without detriment or risk to the health of the animals.

I cannot leave this subject without alluding to the superior crops, both of roots and grain, which have been obtained by the application of dung made in covered home-stalls, as compared with those raised from manure made in an ordinary Farm-yard. This result, however, might have been anticipated and expected apart from actual experiment.

In concluding this article, I beg to state, that I have adopted for several years the system of using earth at the bottom of the yards, cow-stalls, pig-sties, &c., and wherever manure has accumulated; and I have been often met with the question, "Where do you obtain sufficient earth for the purpose?" my answer is, that it is part of my farm economy to provide it at all seasonable times, and take it from all parts of the farm where objectionable accumulations have occurred.

I have seldom seen a farm where loose earth could not be readily obtained, the only exception which I know of is upon high chalk or stone-brash soils, and even in these cases, considerable quantities of earth will accumulate upon the borders of fields, the removal of which would improve the fences.

Upon farms in general, particularly in enclosed districts, large quantities of earthy materials are constantly collecting under the hedges, and instead of being burnt into ashes, as is a common practice, they had far better be removed, at leisure opportunities, to a heap where they would rot and become mellow, for the uses before-mentioned. I must further observe, that it is only necessary to make the use of this earth a part of our system of management, and we shall neither want materials or time to collect it. JOSEPH BLUNDELL.

HAMBURGH FOWLS, AS RECENTLY EXHIBITED.

THE comb, ear-lobe, and colour of the legs, being the main common properties connecting the Pencilled and Spangled Hamburgs, while in several important points a marked distinction exists between them, it has occurred to us that these varieties would be better arranged if their "markings" rather than their "colours" always determined their classification. By such a system we should have Golden-pencilled and Silver-pencilled following each other, and then the Spangled of those colours in their relative positions.

That any relationship can be traced between the Spangled and Pencilled varieties will hardly, we think, be asserted, and it is certainly contradicted by the produce of these birds when crossed with each other failing to present any resemblance to the plumage of either parent, a bird of dingy indistinct colours being the usual result of such an alliance. The common properties already alluded to, and a desire to avoid the confusion of a host of synonyms,

evidence their position under the general head of "Hamburghs," but there is even less reason to argue for any connexion between them from the circumstances known to us of their original habitat, than from plumage or other characteristics. The Spangled birds, indeed, are emphatically English, while the Pencilled, although extensively kept in this country, are imported from Holland and Belgium in large numbers, among which, according to the testimony of one of our most extensive dealers, not a single Spangled specimen has passed into his hands. For these reasons, therefore, we should prefer the classification of these fowls as "Pencilled" and "Spangled," and to let the colours of each of those breeds form their respective sub-divisions. As they now stand in many prize-lists, after viewing the Golden-pencilled pens, we pass to the Golden-spangled specimens of a totally different character, then return to the *fac-similes* of the first-named birds, colour alone excepted, concluding with a repetition of No. 2, with the same excepted point.

In the *Golden-pencilled* class, the result of the past year can hardly be termed satisfactory on a general review; a few pens of great merit, such as appeared at Leeds, and one or two elsewhere, would be the only exceptions to this criticism. In respect of the *Silver-pencilled*, our opinion of those shown in 1853 is to the same effect.

The Spangled birds, however, deserve more honourable mention, and here it may be fairly said that a step in advance has certainly been gained. At Birmingham, for instance, there were several excellent pens of *Gold-spangled* birds, and the same at Doncaster and Leeds; these, however, are the districts where we should most expect to find them. But in the south of England there still remains a wide interval between the specimens usually exhibited and the models we would hold out for their breeder's imitation. The perfect character of the spangle in the male birds of this variety is of difficult attainment, and many a pen has, doubtless, been disqualified on account of the dark streaky-breasted cocks that have been shown with good hens. Among other means to secure the distinct development of the spangle on a clear ground-colour, an infusion of Gold-laced Bantam blood seems to have been had recourse to. But not to dwell on the loss of size consequent on such a cross, the characteristic Hamburg-tail has, of course, suffered, and hence the objections justly entertained by many against the square hen-tailed birds that have lately appeared. The absence or deterioration of an acknowledged characteristic in any family of fowls cannot thus be compensated, and a hen-tailed Hamburg, therefore, has no charms in our eyes. Let the spangle, by all means, be perfect; but however good, we cannot accept it in lieu of the full sickled-tail that so well suits the erect carriage of a good Hamburg, whether Spangled or Pencilled.

In the *Silver-spangled* Hamburgs our expression of commendation must go further. The Northern and Midland Exhibitions were remarkably good in this respect, and left little to be derived in point of form, feather, or condition.

Hamburghs, as a family, have certain precise rules of arbitration on their several merits, which, comparatively speaking, have been only lately applied to many of our other fowls. The decision of judges, therefore, have, in this instance, perhaps, been as severely scrutinized as usually happens in any department of their labours. One judge is charged with an undue affection for a well-bronzed tail; another is thought to cherish an unfair regard for the markings only; comb, ear-lobe, and figure also are said to be severally reckoned as the most essential points in the eyes of others; and, consequently, more cavilling frequently follows their decision in this class than elsewhere. We do not think, however, that such charges have been generally founded in fact. Judges, we believe, have endeavoured to balance all competing points; and it is rather in the conflicting pre-judgment of individuals on favourite properties that such remarks have originated. The former, indeed, might allege on their behalf that nowhere, commonly speaking, does less care appear to have been taken in making up and matching the several pens. On more than one occasion, indeed, have three excellent specimens in a pen been deprived of their chance by the presence of a faulty companion, and the selection of a more even pen is then incorrectly regarded as a preference of all the individual birds.

In a class of fowls so widely distributed throughout some parts of England, it may fairly be required that there should be high merit in every single specimen in a pen to which the honours of a prize are to be assigned; and such faults as a bad ear-lobe, lopping comb, imperfect marking, tail unsilvered in the male birds of the one, and unbronzed in those of the other Pencilled variety, legs of any colour but blue, and the presence of a fifth claw, are most properly held to disqualify the whole lot, although present in a single member only. And yet, strange to say, such disqualification, on such grounds, nay, even occasionally where more than one of these defects has been apparent, has been considered just cause of grievance by a disappointed exhibitor.

Hamburghs have, perhaps, been thrown somewhat in the shade of late by the greater popularity of fowls, either of recent introduction, or of such as Dorkings or Spanish, which, although of common occurrence, have received such great improvements at the hands of experienced breeders. Hamburghs, however, possess such unquestioned merits, in an economical point of view, and are, moreover, suited to so many circumstances where the latter would be ineligible, that there can be no cause to apprehend such remissness on the part of the poultry-keeping community as would forbid the speedy alteration of the points in which many of them have of late appeared deficient. The Birmingham Committee, indeed, have allotted no less a sum than £48 for their encouragement in Bingley Hall in December next, and we are much mistaken if such a recognition of their value, and the free expression of what has hitherto been unsatisfactory in their appearance at Exhibitions, will not render their reviewer's task another season not only more agreeable to himself, but also more laudatory to his subject.

GAUNTLET PELARGONIUM.

THIS is the first in, and the last out, in the market for cut flowers, and is also one of the best bedders for early summer, or late autumn, but whether it is as good for the height of summer, I cannot say; probably it is, if it does not rest awhile after the first bloom is over, as most of that section do. The *Queen of Roses* is a strong bedder, and as full of flowers as can be, but there is only one way, that I know of, to cause it to flower without interruption the whole summer, and down till the frost comes, and that way is very likely to do for the *Gauntlet*, and some others of the old greenhouse kinds, which is the reason why I intrude on the Editor to get this inserted just at the proper moment. Any one who has a stock of young *Gauntlets*, or *Queen of Roses*, or of *Priory Queen*, or of any other Pelargonium which is known to flower pretty freely in the autumn, has only to forego the chance of an early bloom to secure a constant succession of bloom, as bedders, for the rest of the season. This is managed by having the plants stopped between the 20th and the end of March, and after that to keep them as cool as possible till the middle of May, when they are fit to turn out into the beds or borders along the walks.

Young plants, struck last autumn, are the best, and the only ones by which I hit on this plan, after a great many trials with different sorts. If they are stopped before the 20th of March, and are kept in a good greenhouse, they come into flower in the middle of June, and rest a month; but if you can so manage as to keep them from coming into flower till the very end of June, or the first week in July, they will flower continuously after that to the end of the season, and very likely old plants would do the same. I have stopped several old sorts every fortnight, from the middle of January to the end of April, several years in succession, and kept a register of the whole, and those that I stopped about the last week in March did the best. That was my period to stop, for the last time, all the plants I needed for two beds of the *Queen of Roses*, which I wanted to fill early in July, after a crop of Annuals, and that is the best time to stop *Gauntlet*, on the supposition that it rests a while after the first flowering. It will make a bed as gay as any Pelargonium I know of that class; the colour is between rose and scarlet.

D. BEATON.

POLAND FOWLS.

Will you kindly allow me to make a few remarks on your article in *THE COTTAGE GARDENER*, entitled "Poland Fowls as recently exhibited." Your arguments, at the commencement, having reference to the classification under one head of what were formerly known as Tufted Hamburgs and those birds known as true Polands, are, to my mind, so satisfactory as to need no comment; as also your caution to exhibitors who are so fond of *improving* upon nature in the combs and crests of their Poland Fowls; and for their own credit's sake, it is to be sincerely hoped they will profit by the advice given them.

The observations I intend to make (with your permission), apply to that portion of the article relative to the want of hardihood and *profitless* character of the Poland Fowl. Before going any farther, I must inform you that my experience of them has hitherto been confined to the *Silver* variety, and a reference to the prize lists of the principal shows in the kingdom, from last June to January, will show that my birds are no mongrels, they having attracted the favourable notice of the Judges, and were successful no less than ten times in that interval. I call attention to this fact, merely to show that they may be taken as a fair sample of their class; and I can safely say, that as exhibition birds they are equal in point of endurance to any that were ever in a pen, having stood the wear and tear, the long fastings, and feasting to repletion—this day food of the most stimulating character, and the next day nothing—in addition to being confined, in some instances, forty-eight hours in the travelling hamper; and sometimes, as in the case of the Surrey and Birmingham Shows, packed up and sent from one place to the other without seeing home, yet my adult birds have never shown the slightest trace of indisposition or loss of appetite, in fact, were never one wit the worse for it. I cannot say the same of Dorkings or Cochins, which have both suffered more or less in going through the same ordeal from which the Polands came scatheless; the only other birds which I found stood it as well were the Brahmas, which I believe to be a much hardier race of birds than the Buff Cochins; both the latter and the Dorkings were usually scoured for two or three days after coming home: the Polands never so.

As to feeding, run, and general treatment, I fearlessly assert, *that with me* there has been less illness (and certainly not one jot more care taken of them) than among my other fowls; they are fed the same, roost the same, are quite as much exposed as the rest, and, as I have before stated, with the best results. With reference to their character as profitable fowl—in this, I think, they will also bear a more favourable comparison with many of their rivals than you are inclined to accord to them. As egg producers, in my opinion, they may fairly vie with their more favoured compeers the Spanish. I did not register the number of eggs produced from a given number of hens last season, but am doing so now, and, should you deem it worth your acceptance, will give you facts, which will, I fear not, bear me out in the opinion here expressed; their eggs are remarkably fine, and I will also weigh some of them, and when I send the number will also send the *average* weight, because, although an egg is an egg, yet, if ten Poland eggs weigh as much as twelve Cochins, which I think they will, they would, in a great measure, make up for the extra number that the latter produce.

My Polands, last season, laid up to October, and some of them commenced again the first week in February, and it must be remembered, that they continue to lay without intermission throughout the season, never becoming broody; this may, by some persons, be put down against them, but now that we have the Cochins, who will sit as many times in the season as you like to let them, it will only be necessary to keep three or four Cochins hens to have a constant succession of Poland chickens the year through.

As a table fowl (and here I only speak from information), I am told that the flesh is more delicious than that of the Game Fowl. I will grant the chickens are somewhat difficult to rear, and that they are not of such vigorous and rapid growth as Cochins, but the advantages I have already enumerated—their great beauty in plumage, symmetry, and carriage—shall surely be allowed as some set-

off against that one argument in their disfavour, and which I hold to be the only bad quality they possess, from the size of the crests (in good birds) the *range* of vision is necessarily very narrow, consequently, I find no difficulty in confining them within the most circumscribed limits, in fact, the partition which divides them from Brahmas and Cochins in my yard, is, in some places, little more than two feet high, but they never attempt to fly over. I am not sure that the difficulty in rearing the chickens does not lie with the breeder; it is not improbable that they require some mode of treatment as yet undiscovered; but, by practice and perseverance, I think we shall be able, in time, to rear Poland chickens as easily as any of their more fortunate brethren; at any rate, I mean to try. I am induced to say this, from the fact that all my Poland chickens were as vigorous, as hearty, as good feeders, and got on *as well*, as any birds could be desired to do till two months old (at which age we usually think the danger past); about that period, and in many cases older birds, I had the mortification of seeing the most beautiful chickens, day after day, drooping their wings, and in a short time making their exit from the world of chickenhood; however, I persevered, tried various schemes and modes of treatment, and at last, with some very late chickens, was tolerably successful, rearing six out of eight hatched, now all alive and well. I will let you know what success I have this season, and also my mode of treatment, whether beneficial or otherwise, and should be glad if some other Poland breeder would do the same, my object being the attainment of truth and mutual benefit.

In the same paper, in answer to a correspondent, you say that Polands are much addicted to the habit of plucking and eating each other's feathers; to my sorrow, some of my best birds have suffered from this species of cannibalism, *but in no one case* has the perpetrator of the mischief been one of their own kind, but it always has been the work of a Cochins or Dorking. I do not, for one moment, mean to doubt what you say on the subject, believing you have good grounds for your opinion, or you would not have given it, but only intend to show, that in my experience, the Polands are the victims and not the perpetrators of the mischief.—P. JONES.

[Your promised communications will be most acceptable. Any one who will favour us with facts confers a boon upon us and our readers.—ED. C. G.]

SUGGESTIONS FROM THE GARDEN AND THE FIELD.

By Cuthbert W. Johnson, Esq., F.R.S.

(Continued from page 461.)

THE CHIEF SUSTAINERS OF LIFE.

THE way in which the gases of the atmosphere are made subservient to the demands of animal and vegetable life betrays the same beneficence, and the same wisdom, that is apparent in the other works of the Creator. Composed of only three gases, one (the carbonic acid gas) incessantly absorbing by plants, who as regularly emit another (oxygen gas), it is evident that the proportion of these in the atmosphere, would, without some countervailing mode of supply, be speedily and materially altered, but this is prevented by all breathing animals absorbing the very gas which plants emit, and emitting the very gas which plants absorb.

The delightful freshness and sense of pleasure experienced by breathing pure air is known to every one; yet breathing, being an involuntary action, is one of those of which we rarely pause to consider its advantages and its pleasures. It is only a person in a confined room, of which the atmosphere is contaminated with unwholesome emanations, that is really sensible of the advantages and pleasures of freely inhaling a pure atmosphere of the same unvarying composition as created and regulated by the wisdom and beneficence of its Divine Author.

That this happy uniformity in the chemical composition of the atmosphere is preserved in all places, and in all seasons, has been ascertained by many comparative chemical examinations. Atmospheric air, in fact, has been analysed, as obtained from various parts of the earth, from the

summits of mountains, in populous cities, and from the surface of the ocean, far away from land—but its composition was always found to be the same. The supply of its gases, therefore, is always equal to the demand made upon them by the animals and vegetables which tenant the earth.*

Let us, however, proceed in our examination of some of the chemical phenomena which attend the sustenance of animal life from its first existence, and in its progress to maturity. Let us see how the elements are made subservient to our comforts and our enjoyment.

Follow a young animal from the period when it first inhales the breath of life—when the atmospheric air first rushes into its lungs. Witness the wonderful adaptation of those lungs to the separation of the vital portion of the air from that which is to be rejected—the nitrogen, which dilutes and modifies the action of the oxygen gas; a gas the action of which upon the lungs would otherwise be too powerful. Mark the chemical composition of the muscles, the blood, and the other fluids of that body, all intended, and, by their peculiar chemical composition, adapted to the nourishment of the animal. Notice the bones, placed in the midst of those muscles, lubricated by various fluids, which if those bones were composed of soluble substances would infallibly dissolve them. Notice, I say, the chemistry of those bones—how the phosphate of lime, and the carbonate of lime, two salts which, when united with the cartilage of bones, are totally insoluble in the fluids of animal bodies. See how wretched is the plight of those rickety children from whose bones these salts are withdrawn; and yet, how rare is it to find these earthy salts removed from the bones, even by the effects of disease; such a withdrawal is ever an exception to the rule, which we notice for its singularity. Is not this constitution of bones evidence of the most exalted wisdom, and the most Fatherly benevolence?

Examine still further the progress of the young animal's life; the power imparted to it of enjoying the light of heaven; the sweet flower-scented air; the pleasures of warmth; of satisfying its hunger; all of which might have been received, had God so ordained, without the least pleasurable sensation. Reflect on the plight of those who have been by accident or by disease deprived of their palates. They still eat, it is true; hunger occurs as usual, but the pleasure of eating is gone with the power of taste. On the contrary, the atmosphere might have caused irritation and pain when breathed; a very slight difference in the proportion of the gases which constitute the atmospheric air might produce a mixture strangely differing in its action on the lungs. In fact, by considerably increasing the proportion in which the oxygen of the atmosphere is united with its nitrogen, a corrosive acid, the nitric, or aquafortis, is the result. The very proportions of the ingredients, therefore, were regarded so as to constitute that precise mixture the best adapted to the wants and the pleasures of animal life.

As soon as the young animal begins to digest its food, so soon does it begin to increase in size, its muscles enlarge, its bones extend. The chemistry of these enlargements, as far as we are capable of understanding them, is full of interest. The muscles are composed of only four substances, carbon, oxygen, hydrogen, and nitrogen; the food given to the babe, in its milk or its bread, contains all these. They are digested and assimilated with almost unerring regularity, in a way we can neither imitate nor comprehend.

The presence of the totally insoluble salt, the phosphate of lime, or bone earth, both in the milk of animals, and in the flour of Wheat, is most remarkable. It is certain that its presence is essential to the growth of the young animal, to supply the solid matter required for the enlargement of its bones, and it is equally true that God has provided that supply in its mother's milk, and in the bread it eats; but how the phosphate of lime is absorbed from the soil by the green plant of the Wheat, how held in solution by the milk, are facts which can only be classed with the many other unexplained phenomena of organic chemistry.

The moment that organised beings existed on the earth,

it became necessary to combine with their substances a certain portion of heat. Animals, in fact, had to be furnished with the power of generating, or, at least, developing a certain portion of heat, for without that supply the insensible vapour of the atmosphere, so essential to the existence of vegetables and animals, could no longer exist. Life would be immediately extinct; the fluids of vegetables and animals become solid; the earth, in fact, tenantless; the ocean a quarry of ice. To place a living body in a temperature and in a medium in which he could continue to exist, required a foresight and an Omniscience of which we, who only reason from the results of experience or comparison, can form little idea; and we are, indeed, not in the least degree aided in our endeavours to grasp the difficulties of the case by concluding, with some very few credulous persons, that all this extraordinary arrangement of organised life originated from a miraculous accumulation of chances.

But heat is not the only imponderable which betrays the wisdom and foreknowledge of the Deity. Light, too, operates in an essential degree upon organised beings. In its absence, plants lose their green colour, their fluids become more watery, they no longer contain their usual proportion of nutritious ingredients, they cease to absorb the carbonic acid gas of the atmosphere. Plants, therefore, were evidently created with a designed reference to the medium in which they were to vegetate; their health, their green colour, their nourishing properties, as regards animals, were all made with a reference to the medium in which they were destined to dwell. As relates to animals, the construction of their bodies bears evident testimony to the enjoyment they were intended to derive from the presence of light. The yellow, sickly appearance of those persons who dwell in the deep back-woods of America, or in other places where light is only present in very diminished proportion, is generally known. That light also effects the healthy tone of the human body, is well understood; the gloom of darkness, the cheerfulness and exhilaration produced by the glorious light of Heaven are almost household proverbs.

That light was intended for the use of animals, in its mechanical properties, the existence of the eyes of all animals proves; for without light, in what would consist the use of eyes? A thought will readily suggest itself to the mind of the intelligent, when dwelling upon the phenomena of light, what a chaotic world ours would be without its vivifying presence. Its importance is not confined to its most obvious properties, the assistance of vision. Without light, many other chemical changes, besides those to which I have already alluded, would not take place at all; "the blythe blink" of our firesides would be unknown; almost all vegetation would expire, and man would be as ignorant, as degraded, and less powerful than the brutes around him. There is no doubt but that light acts upon all living creatures as a gentle, but enduring stimulus. Who does not feel more active in body, more vigorous in mind, amidst the brightness of summer than in the darker seasons of the year?

A dismal climate, a dark November and melancholy, are associated in our language; while widely different scenes rise to the imagination with the name of bright summer skies. Mr. Stuart, the celebrated pedestrian tourist, has recorded, that he never was so healthful, or in such spirits, as when in a high northern latitude at that period when the sun sinks not below the horizon for successive months. Yet the importance, the necessity, the blessedness of light, its adaptation to the physical welfare of the whole creation, is seldom reflected upon, notwithstanding that this seems, as it were, held up to our attention by the sublime command which preceded the creation of any organised being. "Let there be light, and there was light, and God saw that it was good."

(To be continued.)

CANKER IN PIGEONS.

I HAVE frequently had Pigeons attacked with canker in the mouth and throat, and have adopted various methods to cure it, but with little success, until I tried the following.

If the Pigeon has it very severely, the canker is loose, and a portion of it may be removed, which is advisable as

* This fact may be used as another corroboration of the truth of the sacred historian's statement, that vegetables and animals were created about the same period; for otherwise the consumption of carbonic acid gas by plants, without the presence of animals to restore it, would speedily have exhausted the air of this gas—a gas so essential to their vegetation.

much as possible, and then to apply *Gipsyacum*, which may be had of any Chemist.* It should be used by a feather being dipped in it, and then well rubbed inside the mouth and throat, and repeated *twice a day*, until a cure is obtained; which, with care, may soon be effected. Great care should be taken to remove all birds affected with it, as it is highly contagious.

I have no hesitation in recommending the above, as I have frequently tried it, and always with success.

Your Correspondent, C. H. B., at page 130, No. 268, states that he has kept fancy Pigeons for years, and never but on one occasion knew them to eat *green food*, which, I should suppose, was caused by their not having the *chance* to get at it. I have kept them for many years, and always found them to be very fond of Cabbage leaves, and of almost any sort of garden stuff.

If my birds have been confined to the *aviary* for a few days, through high winds, or other cause, I have noticed them, on being released, fly straight to the garden, and seem to enjoy themselves wonderfully with a little cabbage. I should recommend all fanciers who do not allow their Pigeons their liberty to supply them with green food, for I consider it conduces greatly to their health.

I know that many persons keep open pans of *water* in their *avaries* for the Pigeons to wash, which I strongly object to. I frequently allow my Pigeons to have a bath about once in a fortnight, for a few hours, but on no account would I let them have it regularly, as I consider that it causes many *diseases* in the birds, owing to their drinking the water they wash in.—ORIN.

HARDY BORDER PLANTS.

(Continued from page 446.)

OMPHALODES VERNA.

VENUS'S NAVALWORT.

THIS pretty little early-flowering plant belongs to the natural family of Borageworts, and its little light blue blossoms look so much like the true *Forget-me-not* (*Myosotis palustris*), which grows so plentifully by the sides of our river banks, that this plant is often called by the same remembrance-asking name. It is true, both plants belong to the same Natural order, and the blossoms of each are extremely beautiful, but the *O. verna*, of course, is a very different plant to the other, and delights to be grown in the warm sunny borders, or upon a rockery, where it seems just in its element. It is of rather a wandering or stoloniferous habit; therefore, when grown as a bunch plant in the neatly kept flower-borders, that is, where the plants are kept as medium sized bunches, at proper distances from each other, then this is a plant that will often require to be taken up, or carefully separated, leaving the best portion of the bunch to form the future plant.

This is one of those plants that should not be chopped round for the purpose of leaving just the centre part to remain, for in this, that happens to be just the worst part of the plant and being thus chopped all round is placing the plant, in so much the poorer condition, besides taking away just all the best flowering parts, which are the points of its stoloniferous crowns.

When these plants appear to us to be too large, we take up the whole plant, well work up the soil, either change it, or add a little fresh, and divide the plant, taking care to plant again one of the best side pieces. This we do in the spring months, at the time we may be dressing the borders, and whether it is in bloom or not.

This delightful little dwarf plant is a native of South Europe, and was introduced to this country in the year 1633. The whole herbage of the plant is of a pale green colour; its leaves stalked and egg-shaped; and the light blue flower produced in little clusters from the latter end of February to the end of April. Being so dwarf it is a front row plant in the borders. T. W.

* Our correspondent must mean *Ægyptiacum*. It is an old remedy for ulcerations in the mouth or throat of animals. It is thus prepared. Powdered verdigris, half an ounce; honey, two ounces; vinegar, eight ounces. Boil them together slowly in an earthen pipkin for ten minutes.

SPANGLED HAMBURGH FOWLS.

As an old breeder of the Spangled Hamburgs, I was glad to see we were beginning to have a little discussion upon the points of excellence of this much-admired and justly popular breed. As a frequent exhibitor of the Hamburgs, I feel the same anxiety your correspondent does (who designates himself an admirer of the saddle-feathers), that some definite rule ought to be agreed upon by the managers of the various societies, and that after coming to a decision as to whether we are to have hen-feathered cocks, or those with the long saddle-feathers, that it would be well to insert in the rules, that in such a class the judges would be requested to award the prizes only to hen-feathered, or saddle-feathered, as the case may be decided upon; by that means exhibitors would then know what to show; and, as we are rarely in possession of information as to who the judges are to be, and, perhaps, even then not knowing which they prefer, we are at a loss to know what to exhibit.

Your correspondent is misinformed in saying, that in Yorkshire none but those having the saddle-feathers would be considered pure. I can say, that nine out of ten prizes awarded to the Golden Spangles, in Yorkshire, are given to the hen-feathered. The hen-feathered Silver Spangles are more uncommon, and have as yet been but very little exhibited in Yorkshire. A first prize in Silver Spangled chickens of 1853 was awarded to a pen with a hen-feathered cock at the late Manchester show; and although an unsuccessful exhibitor in the chicken class, I must confess a better pen of birds I never saw.

As a breeder, I decidedly prefer the hen-feathered, the cock being spangled all over the body, similar to the hen, but the colours much more brilliant. Some of your correspondents think the eggs from the hen-feathered not so prolific as from the saddle-feathered. I do not find that to be the case from my experience. I am aware good hen-feathered cocks are much more difficult to breed than the saddle-feathered ones, but I do not think that is a reason why we ought to discard them. The very high price that some of the hen-feathered cocks have been sold for proves the estimation they are held in by the fanciers of this breed, and I think we need no further proof of their popularity than that. Much has been said about which breed is the most profitable. I am inclined to think none are more so than the Golden and Silver Spangled. The quantity of eggs laid by them in a season is unequalled by any other breed, and I have no doubt we shall long see them cultivated, when many of the new and worthless varieties are extinct.

JAMES DIXON, Bradford, Yorkshire.

THE AUSTRALASIAN BOTANIC AND HORTICULTURAL SOCIETY.

INTENDING emigrants will be pleased to see that Australia has institutions similar to those of "the old country," and in the list of Roses exhibited upon the occasion we now report, they will see none but those with which they are, or may be, acquainted in our own Rose Gardens. The meeting was at Sydney, on the 3rd of last November, which is the height of summer there.

"We were delighted to be present at an attempted resuscitation of the monthly meetings of this Society, which were originally intended for the display of specimens, for discussion on the subject and the specimens brought forward, and for the receipt and reading of papers forwarded to the secretary. A vigorous attempt is now being made to carry out these good and judicious intentions of the founders of the Society, and the meeting of yesterday, though but thinly attended, from a want of knowledge of the attractions it presented, is an auspicious omen of future success.

"The secretaryship of this Society has at length fallen into hands which will be responsible for neglect and maladministration of its duties, and in congratulating Mr. Catlett upon his appointment, we can only say, that should he succeed in working up the Society to the position it originally aimed at, and which it ought to hold, he will have done good service to the citizens of Sydney, and to the colony at large.

"The meeting was prudently, perhaps necessarily, confined to the exhibition of flowers and the awarding of certificates; but we hope that succeeding meetings, though adorned by these pleasant illustrations, will take a larger scope. What florists and botanists want here is not only the result, but the process by which that result is arrived at.

"Written documents, carefully got up by cultivators, would, perhaps, be more useful than oral descriptions—at all events, they would provoke more exact enquiry and more minute discussion.

"The monthly meetings will be the true tests of the perfection to which the cultivation of flowers in their respective seasons has arrived, and we hope, in future shows a somewhat more discriminating spirit will be evinced in the awarding of testimonials. Where all is good it is difficult and unpalatable, no doubt, to draw distinctions; but wherever excellence prevails, let it have its due.

"The main feature of the meeting of yesterday was the exhibition of Roses—and certainly our flower shows hitherto have afforded but faint indication of our capabilities in this line. A grander collection of the different varieties of this beautiful flower could hardly be presented in any part of the world than that which met us yesterday. The extreme wetness of the season prevented some of the more showy specimens being brought out in first rate order; but careful cultivation was evident in each collection.

"The largest collection was from the garden of Thomas Woolley, Esq. (Creswick, gardener), and consisted of fifty-two varieties, viz., Letitia, Victorie des Hybrids, Cloth of Gold, Virgil, Multiflora elegans, Queen, Dark marbled, Viola odora, Zendre, Amie Vibert, Allenianna, Lucida duplex, Gloire de Rosame, Louise Philippe, Indica alba, Provence, Emile Courtier, Boule de Nanteuil (particularly beautiful), Delphine, Glory of the West, Annie Bluze, Dupetit Thouars, Sully, La Tortarelle, Psyche, Henri Plantier, Fortune's yellow, Particolored China rose, Fulgens, Angelique (moss), Columella, Shepherd's incomparable, Yellow Banksia, Victoria modesta, Wax, Roi de Cramoie, Kate, Alice, Atoninas, Alexina, Superba, Green's musk, York and Lancaster, Madame Deprez, Shepherd's Ne plus ultra, Indica Lutea, Tagliani, Duc de Guiche, Carnation, Duchesse de Berri, Ferox, Nonpareil Multiflora.

"There were five other collections exhibited.

"The specimens apart from the Roses were few. There was a beautiful *Gladiolus splendens*, and *Gladiolus Mortii*, from Mr. Mort's garden; the latter very beautiful; also a beautiful flower not often exhibited, *Epidendrum macrochilum*.

"Mr. Guilfoyle had twenty-four splendid specimens of *Gladiolus*, which did credit to his skill as a cultivator—they were all Hybrids. There was also a beautiful specimen of *Amaranthus Johnsonius*. Some very beautiful *Gloxinias*, from the Government Gardens, together with a specimen, in flower, of the *Gardenia Stantiana*, (the first time of its flowering here); and a very elegant *Echitis*.

"Medals were awarded to each of the collections of Roses, and certificates to Mr. Mort, for his *Gladiolus Mortii*, and his *Epidendrum macrochilum*, and to Mr. Guilfoyle for his collection of *Gladioli*."—(*Sydney Herald*.)

NEW BRUNSWICK, NEW JERSEY.

Extract from a Letter, dated Feb. 16.

"THE price of provisions here is much greater than usual. Corn is now selling at 95 cents a bushel of 56 pounds. Potatoes at 1 dollar 25 cents; flour at 5½ cents a pound; butter 25 cents a pound. All these articles have sold within a year or two for half the amount quoted above. Beef, mutton, and pork at 13 cents to 18 cents a pound. The wages of labour have increased nearly 25 per cent. A good horse cannot be had for less than 200 dollars; and a good cow for 500 dollars. We have had rather a mild winter thus far; some quite cold days; thermometer 2 degrees below zero, and many slight falls of snow. Our river and canal have been twice frozen over to the thickness of 8 or 10 inches, which has enabled the people to fill all their ice-houses, and all are well supplied. We have had some very

good sleighing, but the roads at present are almost impassable. This month has been very mild and wet, and we consider our winter nearly at an end. I visited the great exhibition of poultry in New York, yesterday, with Mr. — and some friends. The papers state there were 4,000 head, but I cannot believe it, though I never saw such a number of all sorts, from a Bantam as small as a meadow Lark to a Shanghae as big as a Turkey. Every species of fowl was there, and all in fine condition."

POLMAISE HEATING.

BEING a constant reader of your valuable Journal, I observed in the two last monthly numbers a revival of the much-abused system of the Polmaise method of heating pits, greenhouses, &c. &c.

Not being a practical gardener, but merely a devoted student, and fond of every improvement in floriculture, I have bestowed a good deal of attention on the different modes of heating structures for horticultural purposes; in fact, I have the three different methods commonly used at work on my own premises. The old brick flue system was good till superseded by the hot-water system; and that was reckoned the *ne plus ultra* till the application of heated air was introduced; then came the war of words, Air *versus* Water. The late Mr. Meek, though not the inventor of the system, was the first who applied science and brought it to perfection. I had the honor and pleasure of his acquaintance, and he was the only man I have met who thoroughly understood the whole system. When Mr. Meek first introduced his system, I made a point of visiting every establishment round London that erected a Polmaise stove, and I never found one that thoroughly carried out the laws of science; one erected one thing, and another had another plan, and called it Polmaise, and every one was a total failure; hence the whole system got completely condemned; but, having erected my own upon purely scientific principles, I have now had six years trial of mine, and I find it answer better than either the flue or hot-water; and my gardener, who has had considerable experience, prefers it to either. Your correspondent, Mr. Craddock, gives a very excellent account of the working of the system, when done in conformity to the laws of science. Mr. C. is in error when he attributes the discovery to the late Mr. Meek; he brought it from the wet blanket of the discoverer to what it now is—the most perfect and natural system that can be invented.

My only object in addressing you is to create or renew a temperate discussion of the merits of the hot-air stove to the other methods of heating. During the heat of the last discussion the hot-water gentlemen were anything but cool upon the subject.

F. H. S.

BEE-KEEPING FOR COTTAGERS.

(Continued from page 447.)

MAY.—Breeding for the next three months will proceed rapidly; continue, therefore, to supply water, if the weather be dry. The bees will by this time be fully at work.

b. Hives four years old and upwards should be allowed to swarm; keep the centre holes in these hives covered up. In hives less than four years old it is desirable to prevent swarming; keep such hives shaded from the sun, and give the bees in them more room by putting on small hives and boxes: a piece of perforated zinc laid over the hole in the centre of the hive (or of the super if there be one upon it), by allowing a current of air to pass through the hive, assists in keeping it cool: the zinc must be removed and cleaned as the bees stop up the holes in it.

m. Drones begin to appear, and, where swarming is about to take place, young queens are rapidly coming forward.

n. It is not always possible to prevent swarming, neither is it possible to ascertain with certainty when first swarms will rise: the hives must, therefore, be watched from ten o'clock till four from the middle of this month to the end of June. Swarms should be hived as soon as they settle, and should be set up on the pedestal next to its parent hive as

soon as hived; if allowed to continue where they alight, even till night, many bees will return thither the next day and will be lost.

Second swarms will most likely come off between the ninth and fourteenth days from the rising of the first swarms; the means of ascertaining the exact time is indicated in Section 1, under the head, "third swarms:" if second swarms rise before the end of this month, or even the beginning of next, and are large, they may be set up; if not, they, as also third swarms (which do not very often come off), should be either returned to the parent hive or joined to some other second swarm that has been set up, or to some weak stock: second swarms, if set up, may be placed on a pedestal to be fixed next to the parent hive in the space directed in the second Section to be left between each set of two pedestals. Should the weather be bad directly after swarming feed a little, otherwise the bees will most likely perish. Any sweet syrup given in a saucer, with some bits of wood floating in it, will do for feeding with at this season. Do not fix down the hives with clay or mortar; the bees will do this themselves, far better than it can be done for them, with the propolis or gummy substance which they collect from the horse chesnut and other trees.

JUNE.—All the directions for last month apply to this, except as regard setting up second swarms: the directions already given relating to these must be attended to: the bees in them will do more good to the bee-keeper now, if joined to other hives, than if set up in separate stocks.

Keep all plants round about the entrances below the level of the floor-boards.

e. In good seasons, small hives and boxes will be nearly if not quite full; if full they should be taken away. When, however, the supers are about three-quarters full, more room should be given, or a swarm may rise from the stock. A super is full when all the cells are ceiled over: where there are small glass windows in the supers it can be easily seen whether they are full or not: where there are not windows, discretion must be exercised: as a rule, when the bees begin to cluster at the mouth of the hives, the extra room should be given, and about a fortnight after this (if the weather has in the mean time been fine), the full supers may pretty safely be removed.

(To be continued.)

TO CORRESPONDENTS.

IRIS PAVONIA (*A. B.*).—We are much obliged for the additional reference, to which we have access, but not just now. We shall consult all such authorities very shortly, and give the fruit of our harvest; meantime, we may remark, that no British author, now gone to his rest, is worth consulting on the practical question of bulb culture, except Sweet and Herbert; and that what Andrews said of this Iris, long, long ago, might be said of *Disa grandiflora* down to 1850; and yet both are as easy to keep and to flower as any other Cape bulb.

DAHLIAS (*Poor Richard*).—If you have the needful, and the courage to go to work in earnest, you may excel all the florists of the age with Dahlias, without an inch of glass, talk, or canvass, or with no more heat and light than reach you through these pages. "Do" them exactly as they do potatoes—plant out all your roots forthwith, and cover them one inch. In a few weeks the roots will have sprouted, and you can then increase them by "sets," like potatoes, keeping one or more eyes to each set; and every set is then fit for planting anywhere.

ARCHED CLIMBERS (*Inquisitor*).—It is too late now to get in these climbers, unless you had them all on the spot, and the ground ready for them. The best kinds of deciduous ones are, *Clematis montana*, *C. flammula*, *C. Hendersonii*, and *Aristolochia siphio* for the large leaves. The common, trumpet, and Japan Honeysuckles; Virginian creeper; and a choice from running Roses, with a few of the strongest hybrid China Roses, or say *Riga*, to represent the Ayreshires. Of crimson Boursaults, as the best of that section, *Laura Dawnist*; of the Musk cluster, *Felicite Perpetuel*, *Garland*, *Blairii*, *Fulgens*, *Chenedole*, *Charles Duval*, *Great Western*, *Paul Perras*, and *Coup d'Hebe*. But you might try *Wistaria sinensis*, Passion flower; *Cloth of Gold*, and *Soffatere* Roses, and such like, if you are in the south of Ireland or of England.

PEAR BORDER (*Ibid*).—For pyramids, as you propose, from six to eight feet wide will be necessary; but three feet would be enough to begin with.

INDIAN SEEDS (*C. M.*).—We can make out every one of them, and they are the best selection we have seen for many a day. These long lists—which are of no use or interest to any one but the possessor—we would advise to be sent, for the future, with a stamped envelope, and with the address of the party, leaving us space of clean paper to give our opinion. A cold frame will do to get up the following, if sown at the end of April—1, 6, 7, 8, 9, 12, 14, 15, 22, 24, 29, 30, 31, and 39; and 6, 7,

8, 9 (ronifers), should be in friable loam, and have little water. Try 11, the Gigantic Lily, in a cold frame also; no one succeeded with it in heat. A warm frame, or gentle hotbed, will be necessary for 2, 3, 4, 5, 10, 13, 16, 17, 18, 19, 20, 21, 23, 27, 28. Send 26 to the Crystal Palace, as one of the best Indian climbers (a *Bauhinia*). Give 32, 33, and 34, to the poultry—such melons and water squashes are of no use here. 35 is probably a kind we sent there in 1845, the best Suffolk cucumber. 40 is *Phaseolus* something, but of not the slightest use here, though it might be useful at Natal or Melbourne. We would try one-half of 30 (Balsams of all colours) in the open air, also 36 and 37.

BRAVOA GEMMINIFLORA.—Mr. Beaton says,—"When I saw your picture of this pretty bulb, at page 373, I thought your engraver was not much of a botanist, for he altered one of the chief points of its specific character by lengthening the style, or female organ, too much beyond the tube; and, as you said that I wrote something on this plant in my series on half-hardy bulbs, I felt that I was booked with your artist, as birds of a feather. So, to right myself, I looked into 'The Botanical Magazine,' whence you took your figure; and now I can tell you, that I never wrote a word about the plant in the Magazine at all. The plant which is figured from the collection at Kew is quite a different thing from the one called *Bravoa gemminiflora* in my series; but it may be the true *gemminiflora* for all that, and mine another species. I have no access to the original descriptions in the foreign works to refer to. My authority stands thus:—In 1837 or 1838 I had my *Bravoa* roots direct from Mexico. They were gathered by Galeotti, and Dr. Herbert was with me when I unpacked them. He was puzzled with these roots; but he could tell me all the rest of the bulbs in the dry state. I flowered several of the roots out-of-doors, in a narrow border in front of a hothouse, and I immediately recognised them from the coloured figure of the species in the "*Amaryllidee*." Dr. Herbert saw these in flower with me several times, and said they were *gemminiflora*. The one represented in 'The Botanical Magazine,' if it is not flattered, is a much brighter flower than mine, and no two species need be more different in the style of growth. The one at Kew is shown with short, stiff, upright leaves; but my bulbs or tubers were long-leaved after the manner of *Leia viridiflora*, but not so stiff, and they bent over like the tail-feather of a Spanish cock. Mine flowered from the latter part of June to the end of August, but did not ripen seeds."

CUCUMBERS AND MELON PITS (*F. E. R.*).—Yours are heated by flues, in chambers, and, with a pan of galvanised iron above, for retaining moisture. We do not think there is anything decidedly new in the idea, but it is a good one, and we must have a little time to ponder over it, and make a few remarks, and perhaps accompany them with the section you have sent.

TOBACCO SEED (*W. Z.*).—You wish for the quantity for a piece of ground 6 yards by 4. We presume that you could get it from the nearest nurseryman, and, at any rate, from any Metropolitan seedsman. A very small packet would be sufficient, such as a quarter of an ounce. In fact, a single pod would yield far more than you would want. A few pence would be the price. A few years ago we had enough for a farm, but have got out of it. Ask for the Virginian large Tobacco. The cucumber frame would be the best for raising the plants, pricking them out in pans there, and hardening off in the greenhouse before planting. If you have no frame use the greenhouse, but keep the seeds covered with a glass; put a piece of paper over it at night to keep in the heat; and when the seedlings are pricked out, give them what excitement you can from a high temperature and a moist atmosphere. Much may be done this way with a little contrivance. The stronger and healthier your plants by the end of May, the heavier will be the yield of leaves.

PENSTEMON SEED (*D. E.*).—Sow this in any light, sandy soil; prepare the pots as you would see advised for seed pans generally, when treating lately on Pelargonium seed; cover with about the thickness of the sixteenth part of an inch, or a little less; and if you can place the seed-pot in a nice bottom-heat, and the soil be moist and not wet, the plants will be ready to handle in a few weeks—sooner or later, according to the age of the seed and its goodness; and then dibbed out into an intermediate bed, or into other pots, and planted out-of-doors towards the end of May. The plants will bloom early in autumn. If you cannot give the seed these advantages the plants will blow late, or not at all this season, reserving their beauties until another year.

VERBENA SEED (*Ibid*).—Treat this in the same way, only add a little leaf-mould and peat, if you have got it, to the sandy loam, and a little white silver sand. They will want hardening off rather more early than the *Penstemon*, or the green-fly will trouble them. It is generally best to plant them out in rows, in order to prove the kinds. The seed is often self-sown; and the plants are often very vigorous from such seeds left in the ground all the winter.

WHITE FUCHSIAS TINGED WITH COLOUR (*J. M.*).—We fear we cannot assist you. Are the flowers which you mention (*Acantha*, *Diadem of Flora*, *Male's Bride*, *One-in-the-Ring*, *Pearl of England*, *Purity*, &c.), much more coloured than your neighbours? Of course, you merely mean the white calyx, for all these have the corolla more or less coloured. Even the calyx is but seldom a very pure white. There are two white ones we would recommend—*Prince Arthur* and *Duchess of Lancaster*; but we question if even the white of these would be pure enough to satisfy you. You shade quite enough to keep your plants in high health. If you gave more shade and less air, we believe that the colour would be paler; but we should not like to say much for the health and vigour of your plants. We are more inclined to think that the colour, if more perceptible than general, may be owing to the gross feeding, or too much manure-water.

GREENNESS ON THE OUTSIDE OF POTS (*Ibid*).—Washing with warm water holding soda in solution will prevent the greenness to a certain extent; but too much soda imbibed by the pot would hurt some plants. The best plan is to wash them clean, and then make sandstone pots of them, by painting them outside, and throwing on as much silver sand as the paint would take up. The most stylish remedy would be to set your common pots out of sight, inside of little vases, of any shape or form, that would suit pots, and of such a material as would not allow cryptogamic plants to encrust its sides.

DIPLODENDIA CRASSINODA (Mould).—We have a perfect recollection of receiving your MS., but cannot find it anywhere. Please to let us have another copy. Why not let us have your direction? for we often wish to communicate with our correspondents. We should write to you now if we knew how to address you.

BIRMINGHAM POULTRY SHOW (E. Lister).—We sympathise with you most heartily, for we, at other shows, have suffered from similar mistakes. At the same time, we know that the committee last year used every effort to avoid such errors, and to get off the fowls to their owners without delay. We also know, from personal experience, the difficulties attending such efforts, and when losses, notwithstanding, have occurred, we have always replied to claimants for compensation.—"No one regrets more than we do the loss you have sustained, but we did our best to avoid it, and you must remember the exhibition was for your advantage; we derive not a fraction of benefit." If the Committees of Poultry Exhibitions were to be held responsible for all losses we do not know who would be induced to accept office.

GARDEN MICE (Goddess).—We have always found coal-ashes sifted very fine and put an inch thick, and four inches wide, over the rows of Peas and Beans, an effectual barrier against these marauders. We think the application would be equally conservative of Crocuses.

VINE-SHOOTS BLEEDING (Amateur).—As they are small, try what twisting a piece of strong wire round the end will do, continuing the twisting until the sides of the sap-vessels are crushed together. As the bleeding is "not very great," you need not be fearful of injury to the Vine's fruitfulness. You need not be surprised that Collodion, Roman Cement, and Resin, all failed to stop the bleeding; for the force with which the sap of the Vine rises has been proved to be equal to supporting a column of water thirty-six feet high, "which force is nearly five times greater than the force of the blood in the great crural artery of a horse."—*Hale's Statics*, i., 114.

CAPT. SNELL'S SHANGHAES.—"I have been informed an impression is abroad that I was an unsuccessful exhibitor at the late Metropolitan Poultry Show, and that my Buff Shanghaes were there beaten. Allow me to correct this error through the columns of your paper. My birds were not sent to the show in question, save one pen, forwarded for sale, AFTER the Judges had made their awards. Instead of sending to the London Show (it lasted much too long), I sent my birds to Torquay, where they took the first prize, as they had (except second prizes on two occasions) previously done at every show in England at which they had been exhibited.—W. H. SNELL, St. Swithin's Lane, London."

MELON AND CUCUMBER BEDS (A Constant Reader).—Saw-dust at the back and front of the Melon-frame will do no harm to the plants, neither will watering stable dung with manure-water previously to building a hotbed with it; but clear water would do as well for moistening the dung, and the manure-water would benefit your Cabbages and Roses.

BLACK MALAYS (M. F. G.).—Your description seems to apply to the relative sexes of the Black variety of the Malay Fowl; the properties of which birds are in every respect identical with that of the species. The powers of flight, however, indicated by the readiness with which they surmount a nine-foot fence, are certainly in excess of what is usually seen in these birds. But without personal inspection we could not take upon ourselves to pronounce, in this instance, on the probability or otherwise of the existence of any cross with other breeds.—W.

SHELL-LESS AND IMPERFECT EGGS (C. J. S.).—No wonder that your Shanghaes lay such eggs; but it is a wonder that half of the hens have not died of paralysis. We never heard of such a poultry diet before: "Being the proprietor of a boarding school, you have so many broken pieces that your fowls have scarcely any other food, such as rice, broken pieces of meat, &c.,—perhaps more bread than anything else." Do not give the hens any physic, but discontinue all meat, and let them have nothing but the potatoes, rice, and bits of bread, mixed with an equal quantity of fine pollard. The best and cheapest work on Gardening is *The Cottage Gardener's Dictionary*.

SPANISH FOWL (T. F.).—You must not keep more than four hens and a cock in your very confined space. Your mode of dividing it will be useful.

WHITE DORKING HEN (Moir).—It is impossible to advise you upon such scanty information. Your other communication will be noticed fully next week.

SPANISH HEN (W. Curtis).—A slight stain of blood upon the egg need cause no alarm. To prevent an increase, however, give her, at an interval of two days, two pills, each containing one grain of calomel and one-twelfth of a grain of tartar emetic. Keep her upon soft food also for a week.

CAMELIAS FROM CUTTINGS (T. P.).—The double Camellias will not bloom well upon their own roots. They are grafted on stocks of the single Camellia. These stocks are raised from cuttings of the nearly ripe new shoots, near the end of June. They readily strike in well-drained pots filled with sandy loam plunged in a cold frame.

TRAVELLING EGGS (A Regular Subscriber).—Eggs may be sent hundreds of miles and produce chickens afterwards. We know of thirteen eggs which, after journeying 300 miles (from Winchester to Kendal), produced last month nine chickens. They were in a strong box, two inches of bran at the bottom, then an inch layer of oats, on this the eggs were laid on their sides, covered an inch deep with oats, and then two inches deep of bran.

INDUCING ROOKS TO BUILD.—A Subscriber would be glad to know if there is any mode of inducing Rooks to build and settle in old trees. Putting old rooks' nests in them has been vainly tried; the rooks came to them, but only to steal the sticks of which they were formed.

BRAMA POOTRAS (Linda).—They are nothing more, at the best, than Grey Shanghaes. Their eggs are not better, nor do they lay any more than other varieties of the Shanghaes (Cochin-China). The Buffs are certainly as good as any. The early pullets will begin laying in October, and continue to do so throughout the winter.

SHANGHAES RUNNING WITH BANTAMS. (Sebright).—Physical inability, from the extreme disproportion of size, is your only safeguard.

TIME FOR SITTING (Amicus Galli).—We consider March, April, and early May, the best periods for sitting all kinds of poultry. The chickens then have the warmest period of the year to grow in. Your other questions will be answered next week.

NAMES OF PLANTS (Sophia).—No. 1 is *Pteris serrulata*, or Various-leaved Brake. No. 2, *Lycopodium helveticum*, or Swiss Club Moss.

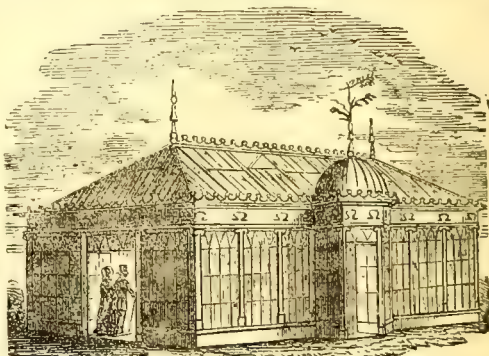
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Advertisements.

MR. WILKINS, residing at Bedford Cottage, Walmer, Kent, within a short walk of the beach, receives a few little boys from seven to twelve years of age, to prepare for the public schools. Terms, Seventy to One Hundred Guineas.

Reference permitted to The Rev. Lord Wriothlesley Russell, Chenies, Rickmansworth, and The Hon. and Rev. Douglas Gordon, the Rectory, Stanmore, Middlesex.

HORTICULTURAL BUILDING and HEATING BY HOT WATER.



EDWARD and A. WEEKS, Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work in the very best manner, and at a reduced price. Materials and workmanship warranted of the best quality. Plans and estimates forwarded on application for the Building and Heating of all kinds of Horticultural Buildings; as also for the warming of Halls, Churches, Mansions, Public Buildings, Offices, &c.

EDWARD and A. WEEKS, PARK COTTAGE, CHELSEA.

SHRUBS, FRUIT, & FOREST TREES, SEEDS,

&c.—Sycamore, Chestnut, and Walnut Trees, five feet high, 3d each; Laurels, 2d each; Privet, 1d each, four feet high; Red, White, and Black Currants, three feet high, 4d each; Hlex Oak, English Yew, Cypress, variegated Holly, Gold and Silver leaf Euonymus, Arborvitae, Honeysuckles, Clematis, Virginian Creepers, Laburnum, Lilacs, Moss, and Running Roses, Berberis, Double-blossomed Furze, Cotoneaster, in pots at 6d each; Escallonia macrantha, 1s each; Standard Roses, 1s each; Cedrus deodara, 1s to 2s each; Aucuba japonica, 1s each; Flowering Almond, 2s 6d each; Tulip Trees, 2s each; Cryptomeria japonica, 3s each; Box-edges, 4d per yard. Every other shrub, flower, or tree, at equally low prices. At W. CULLINGFORD'S, 1, Edmund Terrace, Ball's-pond-road, Islington, London.

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BEAUTIFUL FLOWERS.—50 Varieties of Flower

Seeds, 6d per ounce. 30 varieties of beautiful sorts, 1s per ounce. 50 varieties in half-quarter ounce packets, 4s per ounce. 30 varieties in packets, 3s per ounce.

Any kind, in 1d and 2d packets sent free by post upon receipt of a stamped directed envelope. Vegetable Seeds of all kinds, Shrubs, Flowers, &c., at Mr. CULLINGFORD'S, 1, Edmund Terrace, Ball's-pond-road, Islington, London.

GIDNEY'S PRUSSIAN HOE.—No Lady or Gentle-

man having a garden ought to be without one of these useful garden tools. Price 1s 6d, handled. To be had of all Ironmongers and Seedsmen. Manufactured only by GIDNEY & SON, East Dereham, Norfolk.

BUDDING'S LAWN-MOWING MACHINES,

WITH REGISTERED IMPROVEMENTS.

MAPPLEBECK & LOWE, MACHINISTS & MANUFACTURERS, BIRMINGHAM.

TANNED GARDEN NETTING, for protecting

fruit-trees from frost, blight, and birds, or as a fence for fowls, pigeons, tulips, and seed-beds, can be had in any quantity, from JOHN KING FARLOW'S Fishing Tackle and Net Manufactory, 4 and 5, Crooked-lane, London-bridge, at 14d per yard one yard, 3d two yards, or 6d four yards wide. Carriage free on all orders over 20s, accompanied by post-office order or London reference. Rabbit, sheep, and fishing nets, of every description, in stock, or made to order.

WEEKLY CALENDAR.

M D	D W	MARCH 30—APRIL 5, 1854.	WEATHER NEAR LONDON IN 1853.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
30	TH	Abax striola.	29.831—29.691	58—29	E.	—	42 a 5	27 a 6	8 39	2	4 36	89	
31	F	Abax angustior.	29.704—29.422	57—40	S.	19	40	29	9 55	3	4 18	90	
1	S	Tetragnatha extensa.	29.479—29.354	57—36	S.W.	07	38	31	11 a 8	4	4 0	91	
2	SUN	5 SUNDAY IN LENT.	29.782—29.644	55—36	W.	—	36	32	morn.	5	3 42	92	
3	M	Gammasus coleopratorum.	29.705—29.510	54—42	S.	12	33	34	0 17	6	3 24	93	
4	TH	Oribita geniculata.	29.760—29.662	62—50	S.W.	14	31	35	1 22	7	3 6	94	
5	W	Notaspis humeralis.	29.976—29.775	61—43	W.	02	29	37	2 18	8	2 48	95	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 55.2° and 35.6° respectively. The greatest heat, 78°, occurred on the 3rd in 1848; and the lowest cold, 24°, on the 5th in 1845. During the period 113 days were fine, and on 76 rain fell.

NEW PLANTS.

GOLDFUSSIA GLOMERATA var. SPECIOSA (*Clustered Goldfussia*, variety *Showy flowered*).



This was originally introduced as *Ruellia glomerata*, and came from the Botanic Garden at the Island of Mauritius. The species, however, is now added to *Goldfussia*, and the above is a variety of it with bright purple flowers, rendering the plant more showy, as it is also by the numerous reddish hairs upon its bright green leaves. It is a stove plant, about eighteen inches high, and flowers in November. It belongs to the Natural Order of *Acanthads*, and to *Didynamia Angiospermia* of Linnaeus.—(*Botanical Magazine*, t. 4767.)

EPIDENDUM STAMFORDIANUM (*Mr. Stamford's Epidendrum*).

The flowers of this Orchid are in racemes, greenish-yellow, spotted with red, and fragrant. It blooms in our stoves from February to May. It was found at Guatemala, by Mr. Skinner, and at Santa Marta, by Mr. Purdiè.—(*Botanical Magazine*, t. 4759.)

DICHORISANDRA PICTA (*Painted-leaved Dichorisandra*).

This belongs to the Natural Order of *Spiderworts*, and to the *Hexandria Monogynia* of Linnaeus. It has been known ever since the year 1830, but is now for the first time, we believe, depicted. It is a native of Brazil, and has been for some years cultivated in the Kew stoves. "The spotted glossy foliage, and the purple and white somewhat fragrant flowers," render it attractive. The plant is rather more than a foot high.—(*Botanical Magazine*, t. 4760.)

ANGRÆCUM EBURNEUM (*Ivory Angræcum*).

This Orchid is about two feet high, and is thus mentioned by Sir W. Hooker. "It is not possible to render justice to this noble plant on a quarto page. All we can do is to give a reduced figure of the entire plant, and a portion of a leaf and of the spike of flowers of the natural size, as they appeared on our specimens at Kew, which we derived from the collection of the late Mr. Clowes. The species is a native of Madagascar and Bourbon, and is yet very rare, we believe, in our stoves. The first plant was imported by the Horticultural Society from the former island, through their collector, Mr. Forbes. The flowers, unfortunately, have neither colour nor fragrance."—(*Botanical Magazine*, t. 4761.)

ALLOSORUS FLEXUOSUS (*Zig-zag Allosorus*).

This Fern is to be found mentioned in various botanical works under the different names of *Pteris*, *Pellaea*, and *Platyloma flexuosa*, and *Pteris cordata*. Under the last name it has been known as long since as 1820. It reaches to the height of four or five feet, and requires support, being a climber, by the aid of the angles of its branchlets. It flourishes in a temperate Fern-house. It is a native of Peru and Mexico.—(*Botanical Magazine*, t. 4762.)

PROTECTING materials have been often noticed in these pages, and yet the gardening world is pretty well divided as to the policy and impolicy of using screens for fruit-trees. No one who rightly examines the subject can fail, in some measure, to join with Mr. Errington, as to the propriety of *retarding* the blossom of fruit-trees until the ground temperature permits of a reciprocal action between roots and branches. Taking this for granted, the importance of being able to use one and the same material for retarding blossom, and then protecting it from cold when opened, becomes at once apparent. The chief difficulty has been to find a material economical in its cost, easy in its management, not likely to get out of order, and which, during the

bustle of the spring months, would not monopolise too much time for attendance.

Nothing could answer better for retarding than thick canvass cloth, let up and down by pulleys. Few things equally economical would prove such a protection against sudden and severe frosts, because, in addition to other properties, the blossom would be kept comparatively dry, and, therefore, not exposed to the sudden chills of a rapid evaporation before the frost wrapt them in his folds. But if you allow such a covering to remain on during coldish, dull days, and either cold or warm nights, then your buds, when you wish to retard them, will become weak and drawn; the very opposite of robust and sturdy. On the other hand, when using the

covering at night, when the plants are in bloom, equal judgment is required during the day; if at all mild, though dull, it should be wholly drawn up; if moderately sunny, the same; but if a very bright sun comes with a keen, searching air, the difficulty is whether to remove it or not, the thick shade weakening the blooms, and preventing the due dispersion of the fertilising farina of the stamens; while an unshaded sun, especially after a few shaded days, parches the buds and young shoots, and though the effect is not quite so perceptible, exercises a similar influence to what the sun's rays do on a cutting or a plant just beginning to push its roots.

These, and similar considerations, and the time involved, have led many of our best gardeners out of the dangers of extra covering and no covering, to choose the least troublesome, and though not always the case, yet many instances are known in which the seemingly careless, trusting-in-chance men, were rewarded with better crops than their neighbours, who had attended to the whole routine of covering, not forgetting even the minutiae. It is no wonder, therefore, that all who can are raising up Orchard-houses, in which plants have air, heat, light, and shade, easily regulated according to their circumstances. Every one who has had to do with early fruit of the stone kind knows,—such as in the case of a Cherry-house,—that a slight shade in a hot sunny day, when the trees are in bloom, is one security for obtaining a good setting, and the same of Peaches; but, though very thin netting or bunting would be valuable for this purpose, a thick canvass applied for any length of time would make the remedy as bad as the evil.

When employing strong sheeting for fruit-walls, we have often wished, in such circumstances, for a thinner blind, not to obscure, but merely to blunt the force of, the sun's rays; but where can we expect to get the come-at-ables for double covering, to be used in this manner as circumstances require? Or who is there, that with an eye to economy, not as respects one season, but for a period of a dozen or twenty years, would not enquire whether the money and the time spent upon covering might not get up a good Orchard-house at once?

It will at once be seen that the objections thus made to a thick, moveable covering apply with greater force to an opaque fixed protection of any kind, as the trees are apt to be kept too warm at one time, when we should like them to be cool, and too dark at another, when we should wish them to have light. Nevertheless, after many trials and experiments, we are of opinion that any modes, however simple, of retarding and protecting, are better than none; and that all things considered, when time and attention are given, and proper simple machinery for quickly elevating and lowering used, a stout canvass is the best, though it will prove a little expensive; as we are not aware that any article has yet been manufactured peculiarly for the purpose. We have witnessed several instances of fine crops, where these screens were carefully used, and next to a complete failure when they were discontinued; but, as we

mentioned at first, we have, also, seen failures with their use, and great success, a short distance off, where no protection at all was given.

Granting, then, that protection and retardation, combined, are advantages, the possibility of uniting the two, in any degree, by a *fixed* medium, which will alike keep out heat and cold, though in a limited degree allowing as much light and air as will prevent weakening the blossom, and not so much as to parch them in early spring, and, withal, extremely cheap, must be desirable for amateurs, who cannot give the attendance that a strong canvass would require, and also for gardeners, who either cannot give that attention, or who have some doubts of the propriety of using it. Such a material we have now had in use for several years. It is *Nottingham Thread Net*, rather fine but tough; the hexagon openings being about the eighth-of-an-inch, of course smaller one way, when there is a strain upon it. A new piece attracted one of our best gardeners the other day, and he pronounced it to be, all things considered, a most desirable article, as saving all bother, admitting enough of light, and keeping out a certain amount of cold. It was procured, by post-office order, from Messrs. Boden and Co., of Nottingham. They state that such coarse nets are made in pieces 158 inches and 198 inches wide. One of these narrowest pieces, with a supply of tape or list, top and bottom and ends, to fasten by, covers, comfortably, a wall about twelve feet in height, for fully forty-five yards in length, and the appearance is very neat.

Of course, this would neither retard nor protect like canvass, but it will do a little in the way of both, and, therefore, be not without its use. One thing against it is, that it will not keep out rain, but the drops are broken and dispersed considerably before reaching the wall, especially if there is a wide coping, and the covering is two or three feet from the wall at bottom. On the morning of the 20th of March, we had from four to five degrees of frost, but it did not reach the wall, and from rain having fallen freely the day before, the ground was frozen hard outside the shade of the covering,—it had not gone beyond an inch inside, the ground there being quite soft. A few Peas had been planted out two days before, protection being given with boughs,—some against the wall, some on the border; those on the border, though not injured, were stiff and flat upon the ground in the morning; those at the side of the wall were soft and erect. Be it also remembered, that on the day after their being planted out, we had only a few gleams of sunshine, and, therefore, that the temperature maintained was not greatly owing to the heat of the wall.

Such netting is not only valuable thus for protecting blossom, but also for protecting, and saving, and retarding fruit, and for shading purposes. It will require a very fine-winged insect to find its way through it. Gooseberries of the *Warrington* kind were had the best part of two months last year, after they were gone in the open garden, from using this netting. The plants were on a north border; the netting was fastened by

one side to the wall; and as it was not long enough to reach the ground, a slight rail was put up to fasten it to on the other side, and then, from thence to the ground, mats and netting were fixed lengthwise.—R.

IN a former paper we suggested some analogies between the facts connected with the propagation and dissemination of cholera, and those laws under which certain minute organised growths, as funguses, blights, and the like, are admitted to exist and spread. We have ventured to refer, also, to the old Jewish ordinances respecting the leprosy, which, according to the authorities cited by us, were not opposed to our present impressions on the subject of contagion generally.

The following is a summary of the whole of our present knowledge upon this subject, carefully collated from the report of Baly and Gull, to which we have already referred. We are not without hopes that our readers will now, at least, be able to form for themselves a sufficiently accurate notion of the matter to guide them in all things which pertain to their own conduct; and, indeed, much more accurate than many impressions upon which they are continually obliged to act in their daily concerns.

The foregoing enquiry has been directed to the discovery of the relation borne by the atmosphere to the spread of cholera. The results arrived at lend much support to that theory of the cause of Cholera which regards it as a morbid matter or poison reproduced in the air, and diffused in part, at least, by atmospheric currents. Such a poison brought by the atmosphere to this country might soon be dispersed over many parts of it, and would meet with a suitable nidus for its reproduction in the lower districts near the mouths of rivers, while in parts where the atmosphere from its dryness and purity failed to afford the necessary conditions for its increase or maintenance it would perish.

The unequal distribution of the disease in the winter of 1848-9, would, therefore, be quite intelligible. Its absence, in some parts, where the conditions of unhealthiness abounded in towns and other inhabited places, would be accounted for; since the supposed poison, if it did not perish before it reached these inland or more elevated districts, would find then a [general] atmosphere unfit to preserve its active properties, and to communicate it to the [particular] spots in which it could increase and produce its effect on the inhabitants. The comparative intensity over other parts, for short periods, in the same season, would also be intelligible; likewise, the lingering of the disease in the spring of 1849 in certain spots distinguished for the most part by the local conditions productive of a damp and impure air.

The renewed rise of the epidemic in the summer might be reasonably referred to the increase of impurity and moisture in the air under the influence of a rising temperature, and, perhaps, other meteorological conditions; to the consequent increase of the poison in localities where it already existed; to its distribution by

the air from these foci to other places more or less distant; to its increase in these again, if they afforded the necessary conditions; and its further diffusion. Thus the extent of the disease over the country, and its intensity in each large town, would continue to increase together, and the climax would be reached everywhere nearly at the same time. Lastly, when with the fall of temperature the atmosphere had begun to lose the properties favourable to the transmission of the poison, comparatively few fresh places would become affected, and the epidemic would gradually subside.

At the beginning of summer the poison would find the means for its dissemination, and increase soonest where the sources of damp and impurity most abound. Towns in such parts would soonest become foci (whence it would spread to towns in the more elevated and more inland regions), and in the autumn and beginning of winter would likewise continue longest, to afford an atmosphere fitted to transmit the poison from spot to spot, and, inasmuch as the epidemic is maintained in each town by successive outbreaks in different localities, it would be expected to survive to the latest period where the conditions for the transference of the poison from one place to another existed longest. The exceptions to the order of attack, both of tracts of country and of towns, are equally in accordance with the theory; the purer atmosphere of elevated tracts of country rendering it difficult for the poison to reach the damp and foul localities in which it might increase and produce effects on the inhabitants. The late appearance of the epidemic in some coast districts scarcely offers greater difficulty; the state of the atmosphere varying in different parts of the coast at the same time, and in the same part at different times; the morbid matter, while spreading rapidly over one such district, might be excluded by the state of the atmosphere from another not far distant one.

The character of having the properties not of a gaseous substance, but of a matter in the form of solid or liquid particles, has already been assigned to the cholera poison. Such a poison being distributed only partially through the air, and carried hither and thither by atmospheric currents, might for a long time fail to reach a spot which was itself even well fitted to afford it the means of increase.

The climax of the epidemic was more nearly simultaneous in the different localities at the season and in the area most remarkable for impurity of atmosphere. For in an atmosphere uniformly or very generally impure the poison would find, in all parts of a given area, an equal medium of transmission from spot to spot, and, consequently, would increase everywhere equally, and reach the climax in all at or about the same time; as in the case of the registration districts of London (see pages 93, 94 of Report). But in the air not generally so impure, the transmission of the poison would be dependent on and more interfered with by accidental circumstances. Lastly, the fact, that around the more considerable foci slighter outbreaks occurred in places which from natural site or sanitary conditions had no

special fitness inviting the attack, is consonant with the idea of a morbid poison, which, while it increases in certain foci, is capable of being scattered around them by means of atmospheric currents. (*Dr. Baly's Report, pages 99 to 103.*)

Conclusions—I. The theory that the cause of the disease is a general state of the atmosphere, or general atmospheric influence, or epidemic constitution, has been found untenable.

II. The persistence of the epidemic for a certain time, even in localities of small extent, and its very partial distribution in a country, a town, or even parts of towns, are two facts which at once suggest that the cause of the disease is a material substance only partially distributed. Many spots within a limited area have remained free from it which exactly resembled localities attacked, in respect of the supposed localizing conditions. However, cholera is so far connected with the characters of low site and defective sanitary conditions that it is never very rife except where they are present in a marked degree. The natural inference is, that the matter which is the cause of cholera increases and finds the conditions of its action under the influence of foul, damp air, with the aid of some degree of warmth. This being premised, other facts become intelligible, namely, the persistence of the disease in winter in the interior of large establishments where there is warmth, together with impurity of air produced by the accumulation of many human beings within a limited space; the preference manifested throughout for low, densely-populated districts about the mouths of rivers; for crowded and dirty ill-ventilated towns and places; and, likewise, its appearing generally first in places of the character described.

III. A large body of evidence renders it certain that human intercourse has, at least, a share in the propagation of the disease; and that under certain circumstances it is the most important if not the sole means of effecting its diffusion. Thus, the epidemic has progressively advanced along great lines of human traffic, at a rate varying according to the activity and means of human intercourse in different countries, but never surpassing the rate at which men travel. In India, it has travelled for hundreds of miles, and for months in the teeth of the monsoon, and among bodies of troops marching through countries till then healthy, and has continued to prevail in ships for many weeks after they have left infected parts, appearing first at the seaports of any island or continent which it is newly invading: in a large proportion of cases its first appearance having been preceded by the arrival of ships from infected ports, and of ships actually bringing persons already affected with cholera. In several instances, the first patients attacked had had communication more or less immediate with sick persons brought in the ships. The facts, however, by no means sanction the belief that cholera is always propagated in this way; on the contrary, it is certain that the extension of the disease over large towns, if not over larger areas, may take place independently of communication between the sick

and the healthy. Where human intercourse cannot have been the means of diffusing cholera, the agent most likely to have conveyed the poison is the wind.

IV. The propagation of the disease by human intercourse does not prove its contagious nature. If the poison of cholera increases in damp and impure air, and is likewise capable of attaching itself to the surfaces of bodies, to the walls of rooms, and to furniture, it will also be collected by the clothes of persons living in infected dwellings; and wherever it meets with the conditions favourable to its increase and action will produce fresh outbreaks. Some facts which constitute presumptive evidence in favour of the dependence of the epidemic on contagion, have been found susceptible of explanation in other ways, though the explanations offered have, in some instances, been necessarily of a conjectural nature. The evidence respecting the especial liability of nurses and others attending the sick, though conflicting, is, in some instances, of such a character as to preclude the absolute rejection of the view that the disease has a contagious property, even though it does not usually spread by contagion.

V. The question whether the cholera poison enters the body through the lungs, or through the alimentary canal, has not been conclusively solved; but no sufficient reasons have been found for adopting the theory that the poison is swallowed by the food or drink; and if the character of the water drunk is not altogether destitute of influence with reference to the diffusion of cholera, at least its powers and effects are very inconsiderable in comparison with those of other conditions. That theory, then, alone is supported by a large amount of evidence which regards the cause of cholera as a matter increasing by some process, whether chemical or organic, in impure and damp air, and assumes that although, of course diffused with the air, it is also distributed and diffused by means of human intercourse. This theory explains much that would otherwise seem capricious in the course of cholera, and elucidates the relations subsisting between cholera and other epidemics. The similarity of the local conditions favouring cholera and epidemic diseases generally, together with other facts, agree best with the view that these several diseases are caused by different poisons, all of which find their means of increase in similar states of atmosphere, though these, probably, are modifications of atmospheric conditions more essential to some of these diseases than to others. In the statement that the theory above indicated is the only one supported by a large amount of evidence, it is not implied that this theory is adopted to the exclusion of all others. (*Dr. Baly's Report, p. 214 to 224.*) J. J.

A FEW WORDS ABOUT HAND-GLASSES.

For many years past a notion has existed with myself that a revolution, or rather a reconsideration, is necessary in the matter of garden-tools, glasses, and other appliances so necessary to good gardening. I am, indeed, astonished—seeing what a chance offered,

that no person, as far as I am aware, has ever gone into the question in earnest.

The whole gardening world knows that their attention was strongly invited to what the French call "*Cloches*," about a year or two since. As I do not like to be in the rear of any question of importance, I set to work anew as to the hand-glass subject, to see if (unfettered by the idea of what had been done) I could by any means suggest progress. I certainly have nothing *very new* to offer; but my examination of that subject has not been, I trust, without some use.

Knowing that the Messrs. Pilkington, of those enormous glass-works situate at St. Helen's, Lancashire, were of that class of dealers who earnestly desire progress, not only on account of profit, but an emulous desire to "go a-head," I wrote to the firm, respectfully drawing their attention to this affair about the "*Cloches*." I must here confess, that not knowing any of them, I took the credit assigned to their establishment "on tick;" or, in other words, I was prepared to believe they were first-rate tradesmen; and I have never met with any reason to doubt it.

One of the principals, who signs himself "M. Pilkington," very kindly answered all my inquiries, and, moreover, forwarded me three or four specimen glasses, in order to see if any real advance worthy of the year 1853 could be made. I must now first state my objects in dipping thus into this question.

In common with many other gardeners, I had long lamented the great cost of our ordinary hand-glasses; for a few years since it was no uncommon thing to give twelve to fifteen shillings each for them, and in the rage after novelty they had, in many cases, so altered their original character, as to make them tedious to work, and, of course, exceedingly liable to breakage. It was obvious, too, that any mode by which their make and cost would be simplified and reduced would tend much to their extension; and, indeed, in the latter respect, I have no doubt that before many years have passed these things will be so cheapened and simplified, as that acres will be covered where only poles are now. And what will then be the necessary consequence? Why, that a host of delicate vegetables, now esteemed dainties, and many of which are hourly imported from other climes, will be within reach of thousands.

Now, the faults attributable to the old hand-glasses were not faults of cost alone: in many cases they were so constructed as to be by far too liable to breakage; were too heavy and clumsy; or did not present the proper facilities for giving air or ventilation. As to breakages, everybody knows what an expensive item the frequent mending of glasses used to be in the glazier's account. This was particularly the case with the old lead glasses, which were, in general, most expensive, as well as unwieldy things. As for breakage, as soon as they were half worn they became, in general, so crazy that they could be moved but with difficulty; and it was no uncommon thing for those who had the temerity to do so, to crack two or three panes in the transit. The weight of such glasses, too, was much against them. It was not a mere case of trouble in removal, but that very property had a tendency at every move to derange the panes, as also the very fabric of the glasses. But one most important consideration, and one which should ever bias, in some degree, the hand-glass question, is the mode of ventilation and air-giving. Now, ventilation and air-giving, although constantly confounded, are not precisely the same thing, and it is necessary here to distinguish carefully; although some of our friends may consider it mere "spectacle work." To ventilate, in the proper acceptance of the term,—as I hold it—is to *invite* and *encourage* a circulation; to give air is to let a superfluous heat to escape; although

the latter must, of course, end in promoting a circulation, or even a slight degree of motion.

Now, it is well known, that in the old-fashioned glasses these proceedings were mostly accomplished by "tilting" them up at the bottom by a brick, or otherwise; and that this was a rather tedious proceeding if it happened to fall to the lot of a dawdling fellow, and many a pane has been shaken out or cracked by such incomplete machinery, when a daily performance. In considering this hand-glass question, it is absolutely necessary to take into consideration the fact, that in the majority of cases, such is the character of the ordinary hob-nail or wooden-clog labourer in country gardens—persons who perform such duties—are apt to be neglectful; and it is really necessary, in all ordinary gardening, so to plan such things as to put it out of the power of awkward or neglectful workmen to do mischief. To return, then, to the brick tilting. I, for one, must protest against the daily practice, believing that much better plans can be devised. As to letting the heat escape, the tilt-up at bottom is by no means an efficient plan; it is a most unphilosophical procedure, and in practice it has been frequently found that plants beneath a glass thus treated may be both burned and starved at the same time. Who has not seen an illustration of this in one of those March days, in which, with a bright and burning sunshine, we experience one of those cutting and drying "north-easters," which have been likened to a Har-mattan? Here the unfortunate gardener, if compelled to tilt his glass to prevent burning, is obliged to let in a foe of an equally formidable character; and if his occupants of the hand-glass have been previously petted with a fortnight's muggy weather, the chances are that they will speedily look like withered parchment.

I have hitherto considered this question almost as an ordinary hand-glass question; I do not, however, wish to confine it within such narrow limits; the principles at issue, more or less, concern almost every glazed implement or structure connected with horticulture.

About twenty years since, I obtained some twenty-two-inch hand-glasses, from Birmingham, from the firm of Clark and Co., who were then building a range of metallic houses here. These glasses were to be everything a gardener could desire—framework copper, to avoid rust and expansion, moveable roofs, &c. They certainly were not bad glasses, but, in order to give them the appearance of much finish, &c., the very ingenious inventor had made them octagonal, which, of course, carried much higher pretensions than the old, vulgar, square ones could pretend to; and, moreover, on every side of the octagon where the moveable lid rested, a point or pivot was fixed, with a corresponding hole in the roof-piece; and every evening it became a most ceremonious procedure, requiring, of course, a superior workman to nicely fit these roofs on the basement portion of the glass. However, they looked so fine that we tolerated this nicety in operation for three or four years, when I thought it expedient to file off these gimcracks. I found, too, that in departing from the plain rectangular or the circular form little could be gained, but much lost; and I got a country mechanic to make a plain square frame, metallic, the roof moveable, and having a flange on the exterior edge at its base;—this flange to prevent blowing-off in storms, &c. The flange, when the roof-piece is put on, overlaps the base of the glass, and, of course, keeps out all drip, &c. Scarcely any ordinary hand-glass can excel this thing; it is nearly all that is wanted. I am not assured that it would be amended if a cooler current could be admitted at a low level in the base by some aperture capable of graduation; this might be well for a few things, and, indeed, is almost the only principle deserving of farther consideration.

To discuss the whole question in a single paper, such

as this, is impossible; and I wish now to draw attention to the "Cloches" of our French neighbours, and to point to a step in advance,—one, at least, illustrative of the business in hand,—made by the Messrs. Pilkington, of the St. Helen's Glass Works, in Lancashire, at my suggestion. Mr. Pilkington, it would appear, holds a commercial garden of his own, being fond of carrying out gardening matters with a high hand, or connected with the glass question: his garden, however, I have never seen. Such being the case, it struck me that he was in a position to appreciate the wants of gardeners. I suggested to Mr. Pilkington such arguments as I have used on this occasion, and begged of him to try his hand at a circular "Cloche," or what, when I was young, was called a "bell-glass," in the neighbourhood of London, but to make it with a moveable lid, something like a Sea-kale blanching-pot. Mr. Pilkington kindly sent me a specimen, which is, most certainly, a good thing, and points in the most unmistakable way to the possibility of future progress. If these hints should meet that gentleman's eye, I hope this will induce him to renew the race; and if any one wishes to go a-head in this matter, I would strongly advise him to put himself in communication with this firm, for I am told that their works are pre-eminent, both in character and extent.

By the by, speaking of "Cloches," or bell-glasses, I was reared and spent the first sixteen years of my life in the oldest nursery in England, but one or two, and we had lumber rooms all hung with spider tapestry, in which might be seen scores of these bell-glasses, or cloches, of a green, thick glass, full of "bulls-eyes," &c. They were rarely used, being said to be quite out of date long before the year 1810. We lads used to handle them very unceremoniously, but it was seldom we could persuade them to break. Before concluding this glass question, which I have brought forward with the idea of putting other heads to work, I may observe, that the metallic hand-glasses (which I before observed were made very complete by a country workman) are square, and the lids moveable down to the perpendicular portion of the glass, where they overlap with a flange. In giving air, ventilating, &c., we simply take hold of the handle and turn them slightly round, by which means an aperture is instantly produced at each angle, and this, of course, capable of any amount of graduation. Here, then, the heat escapes at a sort of half-height level, which will be formed, I think, just about the proper point to promote a speedy interchange of warm and cold air, or, in other words, air-giving and ventilation combined.

Messrs. Pilkington's model Cloche is about fifteen inches diameter (but may be had of any size); it has an aperture, in a sort of neck at top, about three inches diameter, and a little bell-cap inverted is placed over the aperture. The Cloche is circular.

T. ERRINGTON.

FLOWER-GARDENS.

IF "all the world is a stage," England must represent the right part for a flower-garden, whether the *plan* be right or not; and the last half of March, with the early part of April, the busiest time for that part of the stage, so there is no time now for beating about the bush, which, if it is not pruned now, is not worth the time it would take to prune it at this busy season; cuttings, old plants, scarce plants and new plants, with seeds and seedlings, spring bulbs and flowers, and the summer crops which follow them, and the mode of succession, are the present and most urgent questions, and into them let us all dive at once, without preliminaries.

Since I left off gardening, I have learned more about the great bulk of flower-gardens than most people would believe. In large places, the gardeners have left off growing many annuals, because they have hothouses, and all that, to keep plants over the winter, and they find it less trouble to plant a bed or border once for all, at bedding-out time, than to fight and strive with seeds and slugs through the whole season. Go to the seed shops, however, and there you will learn that more than half the people grow annuals, and a great number of perennial plants, from seeds every year; and that the rage for this economy is getting more and more into the fashion every year. The advertisements about all sorts of seeds tell the same tale. Now, after all that has been said and written about seeds for the last twenty years, there is no better plan yet than the old one for filling borders; and this is how I learned that part thirty years since. We went to the compost-yard and sifted four barrow loads of rich light mixture, a part from heaps of loam, leaf-mould, peat, rotten dung, and the old rubbish-heap; we sifted very fine; then one man went before—a kind of officer in high trot; he fixed on the places where seeds should be sown, and with a light spade he made a hole in every such place, and spread the soil from the hole among the plants already in the border with great care; the holes might be from six to nine inches wide, and not more than four to six inches deep, along the walk and the centre of the border, but the back row of holes were deeper. I followed him with the barrowful of sifted compost, and filled up every hole he made; and the master came behind us with a whole basketful of seed-packets, bags, and papers, and lots of little sticks to mark the places or patches where he sowed the different seeds. I had the worst part; for if I stepped on a flower, or made a mess on the border, I stood between two fires. Some seeds he sowed in a ring round the patch, and others he put in broadcast over the whole surface, then put a little stick in the middle, and with his finger made a circle outside the patch to mark how far the seeds went; heavy seed, as Lupins, Sun-flowers, Sweet Peas, and such like, he would bury nearly an inch deep, but the smaller seeds he put in very lightly indeed; and he had a sign put to some of these, which his foreman understood to mean that a flower-pot was to be turned over on that patch, or those patches so marked, and the pots were put on the next day.

The empty pot over a patch of seeds has a good deal of meaning in it; seeds of *Lobelias* or *Calceolarias* are perfectly safe under a pot; the rain will not splash them about, the sun will not burn, or dry up the surface and cause them to fail, or be long in coming; cold winds, ditto; and the heat of the sun against the pot keeps the air warm under it day and night; the damp from below cannot pass, and the place is therefore moist enough for seeds without watering. As soon as the seeds are up the pot is tilted on the side the sun shines to give air and light; it is let down again at night if it is cold, but as soon as the seedlings are beyond danger the pots are gathered up in a barrow, and taken away for the season. Now, although one would hardly recommend pots to be stuck here or there, in face of the windows, the plan is so sure and good, that it may be very useful to some who have no glass, or better means than the open air to raise some valued seeds. Anybody may get up seedlings after the middle of April of such delicate things as the small blue *Lobelias*, the *Portulacas*, and the *Mesembryanthemum tricolor*, *Salpiglossis*, *Petunias*, *Calceolarias*, and even *Rhododendrons*, and other American plants, by the use of pots put over the patches just in the same way, and although they would be much later than if they were in a hotbed, they will be all the safer, and make more hardy plants, which would grow with less trouble.

ANTIRRHINUMS.

The 20th of April is the right time to sow *Antirrhinum* seeds in the open air, so as to have the seedlings coming into flower, to succeed annuals, which are sown at the same time, or a little earlier. Mr. Appleby has referred to me for the value of this flower for beds, and that is the way I brought it in; but I never missed it for years, although I used it only as one of the auxiliary plants. If you sow a bed of *Carnation Poppies*, or any fancy Poppy, or a bed of *Clarkia*, or mixed *Clarkia*, or of *Candytuft*, or *Navelwort*, or *Leptosiphon*, or, indeed, of any annual of the month or six weeks flowerers, between the first and middle of April, and sow the *Antirrhinum* as above directed, it will be ready in bloom to make your bed quite full of bloom next day or the selfsame day as you pull up the annuals, and you may discard them any day they look seedy, or going off. Another thing is in their favour:—seedlings of the *Antirrhinum* flower in a few weeks after they come up, and they will transplant all through the season; so that you can have a bed of them of one colour, or of many colours; and by keeping each colour in a row or ring by itself, a bed of them makes a decent appearance; or the planting may be all in regular mixture of colours; but that is easier done from first seeing the plants in flower, when any colour or shade that does not please you may go to the common shrubby, or out-of-doors altogether. In October, a bed of *Antirrhinums* comes in as useful as Wallflowers, to plant out for the winter, merely for covering the ground.

Saponaria calabrica, the low-spreading annual which makes the pink-lace bed to the end of the season, will do so just as effectually from seeds sown in the open air as from those in a hotbed; and the first week in April is the best time to sow them. A pot, or a hand-glass, ought to be laid over them at first, and they need not be transplanted out for beds, or patches, till the latter part of June. Then a bed of *Nemophila*, or of *Eucaridium grandiflora*, or any other low, early annual, may occupy and flower in the space intended for the lace-plant, or if it is only to be used in patches. It may be sown any time in April, when it will flower. Some of my neighbours here have used it both ways, and it answered as well as it ever did with me with all my force and hotbeds; so that it is a perfectly hardy annual after all.

CHINA ASTERS.

We cannot get them very early without a slight hotbed to get them over the first stage, and now is a good time to sow some seeds for that purpose. It is as auxiliary plants that they are so useful for the flower-garden, as they can be moved from the reserve ground to the flower-bed, in full bloom, about the beginning of August, or a little later, when the great bulk of the annuals which were sown in April are past. The end of April is time enough to sow them in the open ground for this purpose. I used to sow them about the 10th of May, but that was to suit the time I allowed for the other annuals, which I used to sow a fortnight later than most people, to suit the return of the family to the country.

ABRONIA UMBELLATA.

This is a new annual, and one that will flower from June to the end of the season, and requires to be treated in the spring like the blue *Lobelias*; that is, a slight hotbed to get it up, and an airy, cool place after that, till the weather is warm enough to plant it out for the season. It might do to sow it at the end of April, in the open air. It is a nice creeping plant, like the *Verbena*, and with flower-heads in the same style. The colour is a light lilac, or violet, and the flowers are very sweet, particularly towards the evening. It was found

by Hartweg, growing in sand on the sea-shore near Monterey, in California; and now I see it in the seed lists. Also, the very dwarf *Coreopsis*, which I mentioned from Claremont last summer. This is a wonder; the species being from three to four feet high, and this form of it hardly six inches, but very close and bushy, and full of flowers, which are as large as those on the old species. Some people speak well of the new annual *Calceolaria chelidonioides*, but from what I saw of it in 1852 and 1853, I would not prize it much. I think it is more suited for damp, shady places, where the sun gets little hold of it.

TAGETES SIGNATA,

though so called in some lists, is the same as I often spoke of as *tenuifolia*. It does best on poor, dry soil, and is the last annual to yield to the frost; it will also transplant from a seed-bed in the open ground as late as the middle of July, when it is coming into flower; and in September it is the most flowery of the annuals.

The beautiful *Sphenogyne speciosa* does well only from the end of May to the end of July to be in flower; and from the first to the end of April is the only time to sow it. The *American Groundsel* is only good from cuttings; although they offer seeds of it, they are not worth having for a gift: they come in like single Daisies, and have little colour.

SALPIGLOSSIS COCCINEA,

as it was called, makes a very fine bed in a dry season; but the colour is a reddish-yellow, and it grows up a yard high, or more, and looks remarkably well in a mass. The beginning of April is the time to sow it on a slight hotbed, and to get more air as soon as it has four leaves. The very same treatment would do for the different varieties of *Thunbergia alata*; or they might be sown across a very slight temporary hotbed, and the glass to be taken off all day as soon as they are up. This is the easiest way I know of to get up half-hardy seeds; and any one, who ever saw early radishes grown on a hotbed, could manage a seed-bed in the same way—or rather in two ways—one, by making a common dung-bed, and the other by making a hole in a spare piece of ground, a little longer and wider than the frame, and eighteen inches deep, and filling it up with hot dung till it was higher, by six inches, than the regular ground, then to bank up earth all round it after putting on the frame, then a few inches of fine-sifted soil, and to sow the seeds in rows or circles in this top soil, then a slight watering, and on with the glass; and little more is needed but to watch for the coming of the seedlings. This is the easiest way in the world to get up lots of seedlings with very little attendance, only a slight watering now and then, and to mind to give the bed plenty of air as soon as the seedlings appear above ground, and when they are all up to take off the glass every fine day, after breakfast, and to put it on at night till all danger of frost is over. Now, about the *Thunbergias*; what I was going to say, is, how well they do out-of-doors, in sheltered places, treated like Sweet Peas, as I saw them, in 1852, at Claremont, where they ripened seeds as freely as Sweet Peas, along in front of one of the plant-houses. The grand secret is, to get them up early in April; not to coddle them, but to bring them up hardy, and to plant them out of nursing pots about the end of May, or as soon after as the weather promise to hold on fine and steady.

CENTAUREA CYANEA.

A pinch of this blue Corn-flower ought to be sown in every garden in the kingdom, if only for cut flowers for the mantelpiece; it is next to the *Mignonette* for long standing; and there is a white variety of it, also a grey one, and a dull pink, with other shades,

and of all plants, these are the most easy to learn how to make proper nosegays with: for we must be told, now and then, that we are as Red Indians in this branch compared with the French. There is not one out of fifty, in all England, who can put five different flowers together without *lumping* them. We are the best growers of all the nations; but the taste for making beautiful nosegays for the hand, or in arranging flowers in the rooms, is only on the threshold in England at the present day.

It was mentioned once, in *THE COTTAGE GARDENER*, that *Martynia fragrans*, which is so difficult to get up, has been found to vegetate out in the open air much better than in pots; and some one told me lately, that by filing off or cutting the hard shell of the seed with a sharp knife, so as to see the kernel, was a good plan to get it up in pots like other seeds. It is certainly a plant well worth growing for cut flowers, and as a single plant against a wall, or in a mixed border. *Viscaria oculata* is one of the very best of annuals; but except in large places, I do not find it anywhere, and few know it except regular gardeners, which surprises me, as if you only cast the seeds in the open border you have it up in abundance, and no trouble.

One of the most useful annuals we have is the *Brussel's Sprouts*, and the last Saturday in March is the best time in the year to sow it, for those who, like me, want to cut and come again; but, as they do not want it for flowers, it is out of place in my list of odds and ends.

DELPHINIUM SINENSE.

This Chinese Larkspur is the most useful kind of all the Larkspurs, yet no one advertises it or even mentions it in lists. We have "splendid" this, "splendid" that, and splendid everything you can think of, and "splendid" puzzles to the bargain, and we shall probably, in a year or two, have *splendissima* in Larkspurs, and yet there is not a seedsman in England, or in Europe, who can furnish you with a packet of *true blue* annual Larkspur; and what is more splendid in a Larkspur than true blue, if you could have it. This Chinese Larkspur is true blue when it comes true to itself, which it seldom does without great care; then it is a hardy perennial plant, which any cottager can keep in sand over the winter, like carrots; it is also the best blue flower for a whole bed of all the blue plants in England, and it flowers from June to November, and is no more than 18 inches high; and yet, if one of our readers want to have it, he must write to the Editor, as if the Editor of a journal like this could find time to attend to a seed-shop. I may here, once for all, say, in plain English, that none of us who are connected with *THE COTTAGE GARDENER* can possibly give any information about where any particular plant or seed can be had, except Mr. Appleby, who is now on his own account in the trade; as for the rest of us, you may just as well write to Sir Charles Napier for a Larkspur, or Blue-bottle, or anything in the trade; and what is worse than all that, when we, the said writers, see such questions, we are but too apt to slight the other questions in the same letters; and if one of us wrote to the Chancellor of the Exchequer about this income tax, and, in the next sentence, asked him if he knew where we could buy such and such gloves, we could only expect to be paid in our coin—to be slighted in our turn.

THE LAST WINTER.

There is one very particular question which we all wish to have answered as fully as can be before the spring is out, and that is, a full and particular account of all the trees, shrubs, and bushes, that have been killed or half-killed this last winter. Also, what bulbs stood it with such and such protection; and here is an answer for two plants of doubtful hardiness from my own garden.

I bought a good-sized plant, from Mr. Jackson, of the *Stauntonia latifolia*, from India, and I divided the roots, so as to make three plants from the one; this took some time in nursing, and it was the end of last June before I could get them planted out, so that they did not grow more than a few feet before the end of the season. I gave them no protection whatever, and they are not the least hurt; they lost a few inches of the turning tops and that was all.

The next plant which I am desirous to see more cultivated is the "Tree Potatoe," or *Solanum jasminoides*. This climber I planted in 1852, and the winter before last it had no covering, but this winter I had the first six feet of it well protected with straw and a double mat. All the young wood it made since last August is killed, but the main branches are quite safe up to ten or twelve feet, so that it is, practically, quite hardy—more so than the common *Passion Flower*—and no plant better deserves a wall.

Cobaea, *Lophospermum*, *Maurandias*, and *Eccremocarpus*, I could not keep with a good covering, and yet I know a plant of *Eccremocarpus* that was only covered the length of one mat, and the branches which were quite exposed above the mat were in leaf before the middle of last February, but it is in a very sheltered corner, near a stack of chimnies, and no doubt the warmth of the bricks saved it. *Viburnum macrocephalum* I lost altogether; but it had no covering, and it was never a healthy plant. The tubers of *Tropæolum tuberosum* died in the ground, and rather deep. All my *Fuchsias* stood well, with a single net over them; and none of my half-hardy bulbs are hurt.

D. BEATON.

CAULIFLOWERS.

WHERE due precaution was not taken, the severities of an early winter have decimated the Cauliflower plants not sufficiently protected; where such has been the case, those remaining will be doubly valuable in consequence of the scarcity. Now, it not unfrequently happens, that in addition to destroying a great number, severe weather also injures, to a serious extent, those which may be left alive. This, however, ought not to have been the case this season; for the early tokens we had of its being so, hardened and prepared plants to endure it. This preparatory state of things is one of the many beautiful provisions of Nature, whereby she sweetens the bitterness of her wrath; and although, at the end of a very severe winter, or, it may be, the conclusion of a frost of unusual hardness, we may have to mourn the loss of many of our favourites in the flowering plant way, those of a substantial kind are equally amenable to the same dire laws and suffer accordingly. Though the month of December and the early part of January were more severe than they usually are, yet we have all seen a great deal of injury done by a very moderate frost in March after an unusually mild winter; added to which, it often happens that mild weather is often moist, and that healthy pulverization of the soil cannot take place without the aid of frost, or those dry, mellowing winds we sometimes have in March; so that as far as cultivation is concerned, and, certainly, all that is connected with an annual or hardy perennial growth, a sharp winter is useful rather than otherwise.

The severities of the winter have, also, I believe, injured, if not annihilated, the great bulk of the Brocoli and other greens cultivated in many of the midland counties, which it seems to have visited with more virulence than the more southern; and amongst the general wreck of things, the Cauliflower plants have not come off scathless; but some have escaped, and some careful hands have preserved the whole, or nearly so, of their stock, and what to do with them seems to be the question now

asked. The demand for them from neighbours and others far exceeds the supply; nevertheless, something must be done; and as the weather, since the snow left us early in January, has been all that could be wished for, in the way of pulverizing and sweetening the ground, there is a fair prospect of the latter being in better order to receive plants and seeds this spring than was the case last year and several years before it; consequently, the artificial means sometimes adopted to make it suitable to the well-being of plants are the less necessary; but supposing a quantity of Cauliflower plants, in hand lights, (having moveable tops) to have been saved, and present a fair proportion alive and healthy, no time must be lost in thinning them out so as to hasten them on. This is, to all appearance, an easy undertaking; and so far as the manual labour is concerned the operation is quickly performed; but, then, is it always well done? Numerous instances attest the contrary; for it does not always happen that sufficient care has been taken to inure them to bear the parching influence of an east wind or frosty night, consequently, they are in a poor plight a day or two after being turned out; for often eight or ten plants stand huddled together all the winter in a common hand-light, not more than twenty inches square, or so, and the latter part of the time they make some growth, so as often to fill the space in a crowded manner with their foliage. Then the too anxious cultivator, wishing to have a few fit for use at the earliest possible day, is as careful in seeing them covered up at night, at this advanced season, as he was in mid-winter; this state of things, so widely at variance with the nicely-balanced course of Nature's operations, induces a degree of delicacy into their habit or constitution, whereby they are ill-prepared to meet the cold, chilly currents of air they must endure when planted out singly. This evil is, of course, much increased when sufficient care has not been taken in removing them; but it is at all times attended with a check.

The best way to obviate the evil above noticed is to have the whole of the plants uncovered some days before planting-out time, and the covering left off at nights too, unless on special occasions of severe frosts or other reasons, and the ground being ready to receive the new crop, they must be taken up with as large balls as they can be moved with, and carried at once to their new abode, and then planted carefully; and if it be a bright, sunny day, a flower-pot might be inverted over each, or some other protection in that way. Observe, that in planting, due care must be taken that nothing but the best and finest earth comes in contact with the root—the fine, mellow portion found at the top, after the ground has lain awhile exposed to the action of the elements, is certainly the best.

In addition to this, great care must be taken to get the plants up with as large an amount of earth as possible—a spadeful to each, when they are only to be removed a few yards, is not too much—the hole being made to receive them beforehand; and if the hand-lights have been standing on ground where it is expected a portion of them will remain for good, it is necessary, in the first place, to select some of the best to stand in each hill. This must be regulated by the size the hand-lights are, the distance they are apart, and other considerations; but, in a usual way, about three is as many as can with propriety be left, and much oftener only two remain; but so many objects regulate this that it must be guided by the wants of each case. Commonly, private families do not care so much for a large Cauliflower, preferring a small or medium-sized one instead, consequently, the plants may stand somewhat closer; but in whichever way the operation is performed, it is advisable, when the thinning is completed, or when part of it is done, to dig and dress the ground around those remaining, and to replace the hand-lights again for a

time, if they be not wanted elsewhere. This will enable the plants to push on, and prevent them receiving that check which the withdrawal of their companions would effect.

When Cauliflower plants have become too far forward early in winter, they very often start up into a premature head, or what by gardeners is called, "buttoning." This is caused by the seed being sown too early; for then the plants, endeavouring to keep pace with other of their brethren in the "Spring Brocoli" way, rush up into flower at the end of March, or soon after, presenting heads, as the term implies, not much larger than a button; this cannot well be prevented; a good thinning, and culture in the way of encouraging a sturdy growth, will partly prevent it; but it is difficult to stop Cauliflowers from "bolting," in the south of England, which are the produce of seed sown before the last week in August; while most people wait until the first of September. Whichever way it is, the last sown ones are generally most to be depended on; and a second crop that may be standing in a frame in some sunny place will often contain more good plants than the earliest batch which have been more attended to during winter; and this second crop must have all the attention paid them now their worth deserves, and they will, doubtless, repay it; for we hear of heavy losses in that way the past winter; and the autumn was anything but a good one for raising seedling plants, &c. The heavy and continuous rains had so cooled and soddened the earth that but really little warmth remained in it. However, as the spring, so far, has been exactly the reverse, it behoves the careful cultivator to turn such a change to good account, and a few early-sown Cauliflowers, sheltered and forwarded by glass, or other protection, are doubtless going on in such a way as to give just reason to expect that the regular succession and production of nice heads is not likely to be interrupted for some time yet; and as Cauliflowers, and their almost synonymous White Brocolis, form important features in the general bill of fare for the year, the propriety of neglecting nothing that is calculated to command these necessities need not be urged.

J. ROBSON.

CUCUMBER AND MELON PIT HEATED BY FLUES.

"As I wish to erect a small pit for growing Cucumbers and Melons without the annoyance of huge piles of dung, perhaps you will be good enough to inform me whether I may expect any success with a structure such as I have sketched on the sheet annexed?"—F. E. R., *Oxon.*

I THINK the plan, of which a drawing is on the next page, is worthy of prominent notice, not only as keeping us in mind of the old flues, but because the consideration of the subject may enable us to give a suitable reply to many enquirers, who, out of various modes described, may thus be enabled to pick out what will suit their circumstances best.

1. I believe that the above plan would answer if the pit were suitably built, and the plants afterwards well-manured. I observe no striking error in the whole arrangement, though, so far as I am aware, the only novelty connected with it is the large pan of galvanised iron set upon the top of the flues. I have had no experience how long such a pan, from four to five inches deep, would last in the circumstances, but my impression is, that when finished, the whole affair would be more costly than a tank or hot-water pipes. There can be no question that such a pan would yield a requisite amount of vapour.

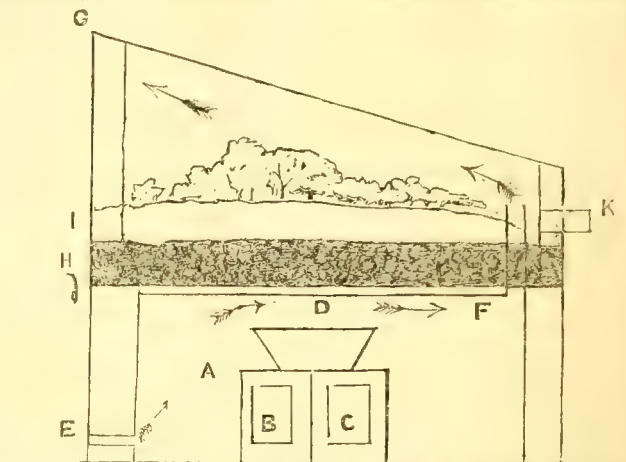
2. There is nothing very pleasing in the huge mounds of dung, unless at Celery and Cauliflower planting

time; but yet, in country places, these hotbeds often give just the suitable preparation for the kitchen and member, that to keep a temperature of from 65° to 70° in cold weather costs no little amount of fuel, though I readily grant, that for a place of the size detailed above, there is less real waste of fuel by such an application of flues as could be secured by any mode of hot-water without flues. Any one who is doubtful of this has only to put his hand on the chimney where a hot-water apparatus is at work in a cold day, and to do the same where a similar heat is maintained by a flue of some fifty feet in length.

3. The only difficulty I ever experienced in growing Cucumbers and Melons by flues, with nothing like such a nice evaporating-pan as the above, arose from deleterious gases finding their way through the joints of the flue, especially when all sorts of rubbish were used for fuel. I have had boxes of Cucumbers in full bearing in March, and looking splendid at ten o'clock at night, that in the morning had nothing green about them but the fruit. The flues were rather old and rickety, and an explosion had done all the mischief, though there was scarcely the smallest crack perceptible. To guard against such a contingency, I would strongly advise twelve feet of the flue nearest the furnace—as much more as might be resolved upon—to be built with brick on bed, instead of brick on edge. It is true, that such a flue would not be so easily heated, and, therefore, would not be suitable for a greenhouse, where, in general, sudden heats are chiefly wanted to meet sudden frosts, but strong continuous heats are wanted for such plants as the Cucumber if forced at all early, and, therefore, though the thick flue does not heat so quickly, it retains the heat longer, and nothing is, therefore, eventually lost, while a more uniform temperature is maintained, and danger from explosion of gases reduced to a minimum.

4. Supposing, then, that it is resolved upon to have such a pit, is the one indicated suitable in size? Taking it at five feet in the clear, I presume the front-wall is intended to be about three feet nine inches, and the back-wall close upon five-and-a-half feet. Now, allowing fifteen inches of soil, though Melons would enjoy three more, and fifteen inches from the soil to the rafters, which would make, with six inches more for slate and rubble drainage, three feet in all, there would be required at least two feet more for chamber, so that, at the least, the front-wall would require to be four feet nine inches, or five feet, and the back-wall six-and-a-half feet in height, or six feet would do, if Cucumbers were wanted only towards the end of April, and Melons in June and July. If we did not go even higher than six-and-a-half feet, the reason would chiefly be for the saving of brick. The chamber could not well be less than two feet in depth, and if perfection was desired, one-and-a-half feet more would be better still, as then the heat would be more softened, and loaded with vapour before entering the house. I once had to do with a splendid, most expensively-built Cucumber-house; the produce of which I have never seen surpassed—but more than double the width of the one under consideration. It was heated chiefly by flues in a chamber, and others that gave surface-heat. The chief peculiarities were two. First, the chamber was so large that a person could walk along it stooping. The second was, that a boiler was placed over the furnace always supplied from a cistern and ball-cock. This boiler had a pipe attached to its

flower-garden, and, therefore, the produce costs little but the labour; but let all heaters of pits by fire re-



A. hot air chamber covered in by a layer of slates, then "crops," &c., &c., and, lastly, soil F.

B. and C. flues, "flow and return."

D. pan of galvanised iron full of water.

E. opening for cold air near the ground, which after being heated and moistened passes into the pit above the soil, by a series of drain-pipes, F., then up, and finally out at tilted sash G.

K. series of drain tiles to admit cold outer air on favourable occasions.

Pit to be five feet wide in the clear; length twenty-four feet; flues and pan running the whole length. What will be the most desirable height and dimensions of hot-air chamber? and pit?

top, three or four inches in diameter, and some four feet in length, from which, in proportion to the heat of the fire, steam was discharged into the chamber, and then there were plug-holes for letting this mild vapour into the atmosphere of the house at will. I know of several imitations, but in no case was the success so uniform, and that chiefly owing to false economy in having a chamber not the third of the depth, and, therefore, the heat and the steam were apt to burn and scald tender plants. There would not be quite so much danger in the present case owing to the pan of water; but a moderate depth of chamber would admit of the flues being examined without interfering with the covering. In fact, without this pan of water, the slate covering would have required to be some twelve or eighteen inches, at least, from the flues, to prevent the risk of its cracking and breaking. The moisture would greatly prevent that. If covered with flag-stone, there would not be the same danger if placed near the flue.

5. The mode of giving air at E is much to be approved of; also at F, though of less importance there, as, when the weather is fine enough to demand abundance, the sashes could be tilted there without any disadvantage. The advantage of the openings at E is, that the air of the house may be renovated without greatly cooling it. Openings, similar to F, should be placed close to the back wall opposite, and then, though the opening at E were stopped, the air in the house, after getting cooled, would pass more easily through the chamber again to be heated and moistened. Plugs should be furnished for E, as, if the place is to be heated economically the openings must not be liberally used in severe weather. The openings F, front and back, should be in the centre of each light; and these, too, should be furnished with plugs to shut in the heat in the chamber when desirable. For instance, if you find the heat of the soil not quite so warm as you would

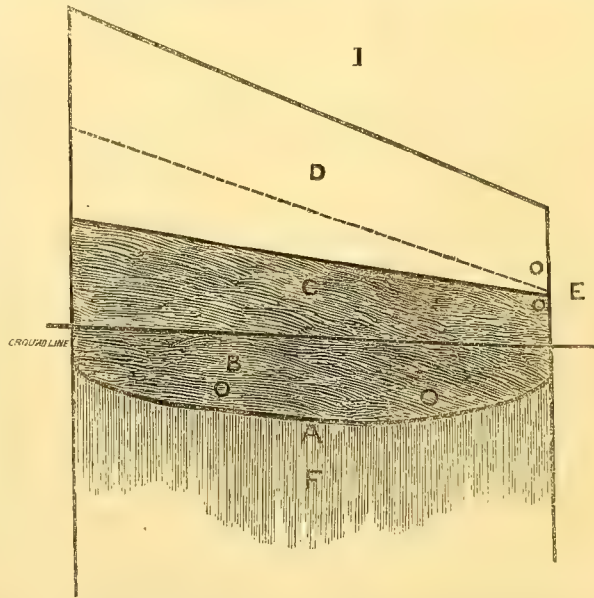
wish—a sunny day gives you plenty of atmospheric heat—put in the plugs, and the heat of the chamber is thrown into the slate and soil.

6. *Walls*.—I suspect there is an intention to have nine-inch walls as far as the flooring, and five-inch walls above that; but this economy in bricks will be attended with no economy in fuel. I should prefer, for an early pit, a nine-inch wall throughout; better still, a nine-inch hollow wall; and best of all, a fourteen-inch hollow wall. I need not now repeat what was said of confined air as a non-conducting medium. I have a pit used for similar purposes with a nine-inch solid wall, four feet six inches at back, and above the ground level, and one foot eight inches in front. Notwithstanding protecting the glass with straw covers, the loss of heat, by the back walls especially, was a serious affair, where the carriage of coals adds from a full third to a fourth of that for which coals may be had by those near a railway or wharf dépôt. I covered that wall with a couple of inches of wheat-straw tied firmly and neatly on; and if any one wishes to know how much heat is thus saved, he has only to insert his cold fingers beneath the straw, in a cold day, and the warmth of the wall will give him an idea of the loss that would otherwise have escaped by radiation. That loss would be greatly ob-

6. Some years ago, I had several pits heated by fermenting matter, inside and out. I hardly know how deep the walls were, for never having enough of matter to fill them they were never thoroughly emptied. The banks of manure, in the shape of linings, kept me ever on the move for fermenting material. An idea of the unsightliness of these mounds, coupled, very likely, with the intention of shutting me out from access to fermenting matter, led to these pits being heated by hot-water, and as they were also increased, I had no reason to grumble, though visions of poverty-struck vegetables began to flit before my mind's eye even then. Well, the pit I have already referred to, four-and-a-half feet at back, and twenty inches in front, above the ground level, is the highest of three ranges, each rather more than fifty feet in length, heated by one furnace, and to which three ranges, I hope some day to have a fourth, with a pipe to keep out frost. The pit, originally, was even flatter than the one of our Correspondents; but, as a new wall-plate and new sashes were needed, we gradually lowered the front wall, so that everything inside is very easily examined, and a fair amount of sunshine is thrown in. Now, I would have wished to have sunk the pit considerably back as well as front, but it so happens, that though we have a deep well in the chalk, we are liable to be flooded-up in thunder rains; and as I knew that every foot I sunk the pipes for bottom-heat, I must also sink the stock-hole, I did what I considered the best in the circumstances, and fixed the floor, No. 1, so high as would enable me to grow Cucumbers, &c., and fair-sized pot plants of anything. The pit, therefore, was filled-up with clay and any earth handy, well-rammed, and then covered with two or three inches of concrete, well-smoothed on the surface, and then covered with a little fresh lime and sharp sand, so that when dry it was quite hard and smooth, and, as I expected, next to thoroughly impassable by water. This was fixed a couple of inches or so below the pipes; and as the stones, brick-bats, &c., are placed as open as possible, and then terminated by finer gravel at the top, the pouring-in of water at the front of the pit, either through a funnel, or else to the wall, inundates this floor, and supplies, at will, a moist bottom-heat. Fine evaporating pans are placed on the front pipes for top-heat. I used a trellis for this pit last season. For the

viated in the case of our Correspondent, and the pit in every way, be more manageable if instead of standing above the ground-level, fully one-half, at least, of the walls were sunk in the ground. The only difficulty in this case would arise from water, as the bottom of the stock-hole would require to be at least two feet deeper than the bottom of the flue. The air openings at E might just be the same, a pipe being brought up above the surface-level.

7. Now, though the flue system will secure, perhaps, the most of the heat from the fuel, still, it can neither be so equally nor so safely diffused as by hot-water, either in pipes or tanks. By either of these modes, Melons and Cucumbers may be grown in pits some three feet deep in front. A great depth of walls, and consequent brickwork to secure a chamber, would thus be avoided. And, therefore, though I have offered the above remarks on the plan of our Correspondent, yet, knowing that nothing suffers so much from the escape of gas from a flue as Cucumbers and Melons, I would strongly advise, before building such a pit, to compare the expense of flue and iron pans, with extra brickwalls and the hot-water system. To enable him to do so, I will mention some modes adopted here, and what has been done elsewhere.



- A. bottom of bed, consisting of concreting, laid firmly on rammed clay, &c.
- B. three-inch water-pipes for bottom-heat, surrounded by clinkers, old brickbats, &c., with fine clean gravel on
- C. soil for Cucumbers and Melons.
- D. trellis.
- E. three-inch pipes for top-heat, with zinc evaporating-pans.

second pit, as the walls are not so high, the Vines were generally trained on the ground; but Cucumbers or Melons are only one or two of the numberless purposes to which these pits are applied. It will, at once, be seen that there would be no occasion to have a wall any deeper than the clay or concrete bottom, and fully half of that might be sunk. The pit is almost six feet in the clear.

9. No. 2, is the same pit which I modified this last winter. I used to grow winter Cucumbers in the Pine-stove, and when, some time ago, Pines were discontinued, it was desirable to have Cucumbers in a lesser place, so as not to use much fire in winter. I grew them, therefore, in No. 1, but I found that they often

wanted a little attention, when, owing to the weather, it was impossible to give it to them; and there being

little opportunity for working the syringe on the under side of the leaves, they were kept clean with more difficulty. I resolved, therefore, to change No. 1 into a small house, No. 2, by digging out a path fifteen inches wide at the back, increased to some twenty inches for elbow room, having a small eighteen-inch door on the ground level in the back wall, for popping in, and nothing could answer better. They who have grown fine Cucumbers in pots will at once perceive that even by this narrowing of the soil space there is ample room left. The sinking of the path cost only the labour of removing the soil and building a four-inch wall, as far as the top of the soil, as the back wall was existing previously. In making such a pit, though a back wall some seven-and-a-half feet would be wanted, there would be no occasion for sinking the front wall lower than the flooring.

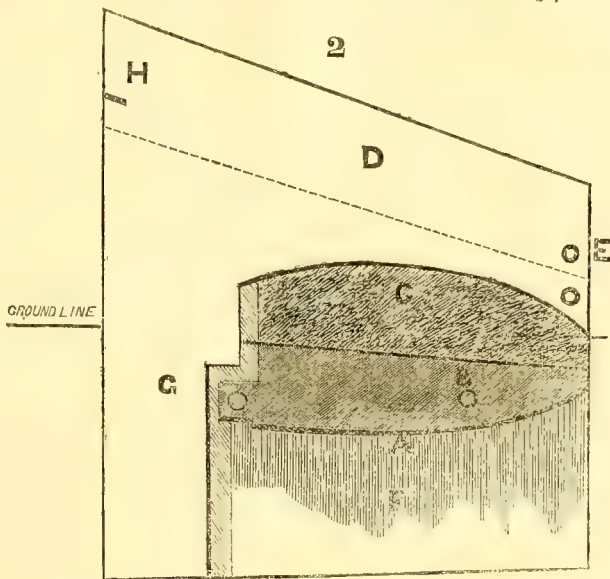
Nearly one half of this was used for early Cucumbers, the other part had Strawberries, and other things on a rough stage thrown across the pit. It is now planted altogether with Cucumbers; and though there are Strawberries in good condition on the back shelf, they are brought there to swell and ripen merely. Before the Cucumbers were planted in the second division, though the same pipes heated the part appropriated to Strawberries, &c., they were kept cool enough when flowering and setting by giving plenty of air. A glance at the section will give an idea to every gardener to how many purposes of propagation, &c., the part next the curb wall may be applied in early spring, after the Cucumbers have been placed in their mound of earth in

and are now as good and sound as ever; and that I partly attribute to banishing every painting and smearing substance from them.

11. I would strongly advise every amateur, before commencing to build this season—as economy with him must ever be a principal motive—to turn back to the section given, page 337, in No. 52, the last number of the second volume, in which it is shown how a compound of pit, forcing-house and greenhouse, are all heated by a small wooden-tank, heated by a small boiler, with two iron flanges, the communication with the tank being kept up by two leaden pipes. I do not think I ever saw such an economical arrangement. I popped my head in this house about a month ago, and the sight was a very tempting one. I wished particularly to notice—the state of the one-and-a-half-inch thick boards, composing the sides of the boxes, acting as pits; and, thanks to the arrangement of not allowing the earth to touch them, and to their being merely planed, and not painted or smeared, they, as well as the tank, seemed as fresh as the day they were put up.

So far as I recollect, there was something very suggestive in the whole progress of this house. I believe a pit was to be heated with this tank with the assistance of dung-linings outside. The heating power was found so great that the linings were not merely dispensed with, but the walls of the pit were removed, and the boundary-walls of the linings being raised were made the walls of a small house, with a narrow path round the tank. Still, there was plenty of heat and to spare. The back wall was therefore lowered, glass sliding-sashes substituted, and a nice little greenhouse placed at the back, so that the roof of both places has one uniform slope. In very cold weather the greenhouse has at once the necessary temperature by sliding a few of the sashes.

12. Neither in the houses heated by the above wooden tank, nor in the pits No. 1 or No. 2, have I described any mode for heating the air before admitting it into the house, as so properly alluded to by our Corres-



G. path-way cut out at back, to enable all work to be done inside in wet and cold weather.

H. Strawberry shelf.

Here (March 14) Cucumbers and Strawberries are alike fruitful and luxuriant.

the centre. The trellis consists merely of a few rough spars of wood, nailed together, the size of a light, and crossed with string and wire. The only objection I have heard urged to this arrangement is, that when it is desirable to use such places for plant repositories, the space occupied by the path would be next to lost; but I do not see the force of the objection, as tall plants might be placed there, and if not wanted for that purpose, boards on a stage could be thrown across for setting smaller plants on. Again, for early work I could not hardly improve on the present arrangement; but if Cucumbers were not wanted before the approach of May, two four inch pipes, surrounded with rubble, with openings back and front to let the heat up, would be sufficient for both bottom and top-heat in a five-foot pit.

10. If a tank should be considered preferable, one four inches deep, of iron, brick and cement, or wood, would obviate the necessity of high walls, unless a pathway was desirable, as in No. 2. I do not think that the cement for a tank in such a pit as our Correspondent's would cost a great deal, and the bricks required for flue and chamber would be more than sufficient to build it. Any person, who has ever made a brewer's cooling-tank, could say for what a wooden one could be obtained for, and that three, four, or five feet wide, four inches deep, divided in the middle, and covered with slate, would give as much heat as he would know what to do with, provided there were six inches of open rubble over the slate, and openings round, for the double purpose of pouring water in to command a moist heat, and to let that heat into the atmosphere. I see, the other week, enquiries as to patching and securing such a wooden-tank to make it hold water, but if properly made, and well beat at the joints, and red-leaded at the joints, there will be no difficulty in this matter, and no need of any covering or coating whatever; as when once filled, and kept full, the continual swelling will prevent everything like leakage. I do not know how long such a wood-tank would last, but I know of some that have been in use fully ten years,

pendent. The fact is, I give but little air in cold weather; and when very cold, a small quantity keeps up a healthy circulation. Were I close to a coal pit, I would use means for carrying-out our Correspondent's idea on this subject as far as possible. With a rather low temperature at night, there is less danger from a high temperature during the day. Circumstances must, therefore, often regulate our practice. For instance; I have seen splendid Pines, that were grown and especially swelled with a minimum of air, having a high temperature in sunny days, and with but little heat in pipes or flues. I have seen as fine fruit on stubbier plants, where air was given in abundance, though to give that, the heating apparatus was hardly ever out of use, even in summer. This abundance of air yielded more returns from the stubby habit, in a certain number of feet; but, of course, against this was to be set a considerable extra amount for fuel, a matter of less moment where that necessary of forcing or growing tropical vegetation is plentiful and near at hand, but a matter of great importance, where, owing to circumstances, the fuel bill is a heavy item for gardening expenses.

R. FISH.

ALLOTMENT FARMING.—APRIL.

As our old almanacks had it—"with the farmer and the gardener this is the busiest month in the year;" and, indeed, it is equally true now as a hundred years since; but we may add, that since those days, although April occupies the same position still, the other months do not; they are every one much busier months than their predecessors, owing to improved practices, together with an extension of objects.

It may fairly be averred that *the chief foundation of a successful gardening year must be laid in April*. Any dawdling or neglect in this month is perfectly irremedial. Therefore, let us beg of our readers to spare no pains whatever, to permit no excuses to come between them and their plans. In the language of that Book of books, the Bible—"Whatsoever thine hand findeth to do, do it with all thy might." Surely, the past long and necessitous winter will have taught thousands the immense importance of a previous summer's perseverance. Those industrious workmen who plod with all their might in their allotment or garden, and who live near to the sluggard, will have had ample proofs this winter of the vast benefits accruing to a family through the industry of a good father. They would, in the darkest and coldest night, amid the howling of the wind, and the battering of the tempest against their windows, look back with a secret pride and joy on the labours of the past summer—plainly attested by the snug fire, with its kettle of useful roots steaming away for soup or other compound. Again, then, let me challenge every reader to screw his courage up, and remind him that his own family, as well as his country, expect that he will do his duty.

Now let us see what are the chief things for consideration at the beginning of April. Mangold, Swedes, and Carrots, must be first thought of, and I suppose I may add Potatoes. Root-crops, as winter stores, are always with me a first consideration. Next in order comes the providing plenty of Greens, and the various Cabbageworts to be introduced, chiefly in mixed cropping for autumn and winter use, or for sale. These two points secured, the rest is composed of smaller matters which cannot be easily grouped, and which we will simply point to.

I spoke, in March, of the preparation of the ground for these root-crops, and may fairly suppose, that with the excellent spring weather which the kingdom in general has experienced for several weeks, that little work of this kind is in arrears. Nothing but sickness can excuse an allotment holder for such neglect. To those who are behind, we say, if the ground is tolerably dry lose not an hour in getting root ground ready; and if very stubborn, and in a neglected state, you had best ridge it for three weeks, and then, seizing a dry time after this small fallow, break it well down with the fork.

I should say, that as a general maxim for allotment holding, the gardening of cottagers, &c., from the 15th to the 25th of April is the best *Mangold*-sowing period; and for *Swedes* to grow where they are sown, from the 1st of May to the 20th. However, these periods, in which considerable latitude is given, must be ruled, in some degree, by the condition and character of the soil and by the weather; for admitting, for argument's sake, that Swedes or anything else should be sown on the 20th of May, wiser would he be who sowed on the 30th, with his soil in good trim, than he who sowed on the 20th, on an ill-worked soil, and in bad weather. This argument applies to nearly every crop we have to deal with.

Swedes, to transplant after Potatoes or other crops, must be sown according to the period in which they are wanted, although, it may be observed, that if they can be grown very thin in the seed-bed, they can scarcely be too soon sown, as they transplant well when they have bulbs as large as a duck's egg. They should, therefore, be sown in drills for transplanting, and thinned in the drill; they will thus be capital plants, and with good management may equal those sown to remain, and thus an extra crop be obtained the same season.

Care must be taken to avoid *mildew*, to which this crop is so liable; and in order to guide our readers as to a preventive, I must advise them, that whatever tends to check the plant whilst in the middle of its growth, say during July and August, has a tendency to produce mildew; therefore, badly-worked soil is one of the chief predisposing causes; such soils are more liable to be affected by droughts, and, moreover, offer much impediment to a free extension of the fibres. Deep, well-worked, and well-manured soil, therefore, for the Swede.

Carrots.—The larger kinds should be sown at the end of the month, if the ground is in fine order, otherwise they may be got in any time before the third week in April. Many of our good growers are partial to late sowing; they say the chances of the grub are lessened; and I do think there is truth in it. In addition, the Carrot, when young, is a most tender thing, and means ought to be taken to ensure as rapid a growth as possible when above ground. It is slightly impatient of frost, and ought not to be above ground before the second week in May, by ordinary culture. Here, while speaking of rapid growth, let me again refer to *the compost* so often pointed to before. I am using it to almost every crop. My mixture is as follows:—Peruvian guano one part; burnt or charred ashes three parts; soot four parts; and old rich manure, like black mould, four parts. This is all thoroughly mixed; much pains is taken in this proceeding, and it is applied liberally by hand. All my root-crops have a little manure dug rather deeply in, and the dressing with this compost applied with the seed; and my object is twofold, viz., to establish the young plant quickly, and to provide a rich and moist medium at a level beyond the reach of droughts, when the plants should be enlarging much in bulk, say after Midsummer.

Potatoes, if not planted, must, of course, be got in immediately, and what little manure is used, let it be old and mellow. Our readers may refer to other advice in the number for March.

Winter Greens.—Nearly all that class of vegetables called Cabbageworts, must, as far as concerns the allotment holder or cottager, be sown during April. The following I recommend, and their importance is indicated by the order in which they are placed:—*Green Kale*, *Brussels Sprouts*, *Savoy*, *new Cabbaging Kale*, *Sprouting Brocoli*. I have left out *Cauliflowers* and the ordinary *Brocolis*, as they are more of a luxury than profit, unless grown for market purposes. *Cabbage*, too, forms an exception; those of a dwarf, compact kind, should be sown monthly, beginning in March and ending in August. Two general sowings, then, should be made in allotment gardens of these *usefuls*—one in the end of March, or beginning of April; the other about the 24th of April; these two will, in general, serve to meet every reasonable demand. Those who wish to have very large Savoy, Kale, &c., may sow in the second week of March, but they must lay their account with having to "prick them out," as gardeners term it. I, however, think that much of the time employed in these extras (which just serve to astonish for a moment, or cut a dash at our exhibition-table), would be far better employed, in these needy

times, in deep delving, and other such processes as serve to bring much profit without extraordinary display.

About *Lettuces*, *Spinach*, *Kidney Beans*, a *Cucumber-bed*, &c., I think I need say little; our readers do not require amplification on these nick-nackeries every day. I would rather address myself to the question of *profit*, for although it has been the fashion to cry—"a good time coming, boys;" a cry engendered by the high amount of commercial prosperity which has taken place through the blessings of peace; yet, I should now urge that this cuckoo cry be laid aside for awhile, and say, there is a serious time coming, boys. Leave off dreams and visions about luck; and fall back on that kind of moderation in desires, perseverance, industry, and simple and single-minded trust in Almighty God, which have characterised the truly great and good in all ages.

High culture must now be the aim of all who would have a good garden; the fork, the hoe, and the spade, must be kept a-going, and a judicious forethought exercised in carrying out such operations, always having regard to the weather. A prudent and diligent manager of a plot of ground will escape much of his neighbour's extra labours, and, at the same time, attain a greater degree of success, by joining a good head to a sound pair of hands and heels.

Let me here repeat advice about the *manure-heap*. This is no trifling affair with any cultivator of the soil; certainly not with the cottager. My advice is this: never let your manure-heap get hot—warm but not hot—say about the heat of new milk. Never let rain enter and pass through it like a colander, or steep it. I remember, when a lad, hearing a lark of some sailors, who, in the days when tea was beginning to be used in England, took a fancy to try this outlandish thing. They boiled it, strained it, and after pouring away the liquor dished up the tea-leaves with pepper and salt. They thought it poor diet, as well they might. I much fear that many use their muck-heaps little better.

R. ERRINGTON.

APIARIAN'S CALNDAR.—APRIL.

By J. H. Payne, Esq., Author of "*The Bee-Keeper's Guide*," &c.

WITH the present month the apiarian's anxiety for the preservation of his bees will, in a great measure, cease, for where any are alive and in health, it must have been by the most careful attention in feeding, &c. The mortality has, indeed, been very great this winter; many persons of my acquaintance have lost *all*. I am happy to say that I have not been so unfortunate, for I have at present three out of fourteen alive; but, perhaps, the most trying time is now approaching, for the bees are aroused into activity, and the population is rapidly upon the increase, that should a week or two of cold wet weather set in, the few that are left will be in great danger, unless well-supplied with food; and at this time I would say that barley-sugar is the best.

POLLEN.—The whole tribe of Crowfoots are now making their appearance, all of which are eagerly sought after by the bees, but more especially the Pile-wort (*Ranunculus ficaria*), which affords them such an abundance of pollen during the months of March and April, and which abounds in meadows, pastures, and hedge-banks. Seeing an abundance of it carried into a hive is a sure proof that the stock is in a healthy and thriving state; but, let it be remembered, that pollen has nothing whatever to do with supplying the bees with food, for they will die from starvation with the combs filled with pollen, for it is only in the larva or grub state that they eat it; therefore, if the stocks have not a store of honey, go on to give barley-sugar.

HIVES.—It is now time to have a supply of *new* hives for the summer's use, for by no means put a swarm into an *old* hive except it should be one of last year's already filled with clean new comb; this, as I have before said, will be a great help to the bees.

WASPS.—Queen wasps appear to be more numerous this spring than usual; suffer not one to escape. I have been fortunate enough to kill all that I have seen—a good syringe is a most useful instrument for the purpose.

WATER.—Let water be placed in the vicinity of the apiary; at this season it is very important; the bees *must* have it, and if not supplied to them, they will go to brooks or ponds for it, where many of them will be drowned.

GAME FOWLS, AS RECENTLY EXHIBITED.

POULTRY Societies had been for some time established before any high degree of excellence was manifested in their Game classes. Whatever the cause of this falling short in a race of fowls possessing so many good properties, and so generally kept, whether they were regarded, from their contentious disposition, as unsuited to the exhibition pen, or, from motives of a prudential character on the part of their owners, were kept back from public notice, it will probably be admitted, that until the last year or so they have not on such occasions been worthily represented.

Birmingham, however, in 1853, amply redeemed any past deficiencies, and the striking improvement in their classes then effected was also in a greater or a less degree shared by many of the other exhibitions of that year.

In numbers, the *reds* have usually preponderated, and of these, again, the "black-breasted" seem to have had the preference. The plumage of the latter, indeed, presents the most agreeable combination of colour, and this especially in the hens. But too many exhibitors, and sometimes even those who ought to have passed their noviciate, have much still to learn in matching their birds. In this observation, we do not merely allude to birds of the same variety with differently coloured legs, or unmatched in respect of feather, but to the strange, indiscriminate jumbling together of the black-breasted, and the other reds. Surely, in neither sex of these several varieties is there any absence of characteristic distinction that would account for such confusion. The dusky tints of the hens of the streaky-breasted birds and the gingers, are in the strongest possible contrast to the clear light hues and delicate marking of the black-breasted hens, and in the cocks the veriest tyro can hardly err. Yet hardly an exhibition occurs without an instance of such carelessness.

The Game fowl has the widest licence with regard to the colour of its legs. White, yellow, slate and olive, are here all admissible; the preference existing solely in the eye of the different breeders. Our own selection of the white-legged birds may have been influenced by the merits of the celebrated "Derby" strain, of which the white leg was considered an important characteristic. White, or yellow, however, to our own eye, have a decided preference over the other colours. Fault was found at Leeds with a decision that gave a prize to a pen of black-breasted reds, in which the cock had a portion of the sickle feathers of his tail white, an appearance which has been commonly, but erroneously, thought to indicate the infusion of baser blood. But for many generations this peculiarity has been frequently noticed in the Derby strain, but without the slightest evidence of either deteriorated courage, or of deficiency in any of the other properties of the Game fowl. We should certainly prefer not to see it; but at the same time, we would not dwell on it to the disadvantage of the bird.

The *white* and *pile* birds have also been remarkably good; but for such perfection of feather as may gain a prize they would seem to require the indulgence of a good country run, an advantage that many of their present exhibitors would appear to be destitute of. All our enquiries have failed to connect the white specimens to which the designation "White Indian Game" has so often been applied, with any oriental derivation. So far from it, indeed, that they present a marked opposition in point of figure to all game fowls of really Indian origin that we have ever met with; for the heavy, thick-set proportions of the latter are as widely removed from the peculiarly graceful symmetry of the common white Game fowl as we could expect to find in any sub-varieties of the same family. These white birds are, in fact, identical with the "Smocks" of our Midland Counties. The mention of Indian Game fowls induces a remark that specimens of this breed are far from uncommon in the south of England, and around Plymouth, especially, they have many admirers, in whose ranks, however, we cannot consent to be reckoned. The fine clean head, the graceful yet powerful neck, with the extraordinary muscular, but yet symmetrical proportions of the leg of the English bird are all absent; and although we may gain heavier weights, these but ill compensate for an ungainly figure and coarse frame. We are speaking of the Indian Game fowl, properly so called; for in more than one importation from those coun-

tries we have seen specimens with every evidence of unstained England blood, the descendants, doubtless, of some of those birds of which our East Indianman, in days of old, had large consignments.

In the *black and brassy-winged* classes we have lately had many birds possessing excellent points, in respect of size, no less than shape; they appear, however, to find favour, comparatively speaking, in the eyes of few. The beautiful "Furness" birds of former days, now of rare occurrence, would prove acquisitions to any show.

Our partiality for the black-breasted reds has been acknowledged, but we should be sorely put to it for reasons to confirm our choice, when a really good pen of Duckwings made their appearance, provided always that they are white-legged birds, a condition that harmonizes best with the general tone of their colouring. The perfection of form attained by hens of Game blood, is, probably, as frequently shown in good specimens of Duckwing hens as in any other variety; the delicate character of their plumage, doubtless, adding materially to the general effect.

Of *greys* and *blues* we have had a fair proportion, but not in such form, it strikes us, as would bring them into competition with the varieties already mentioned. As to the *Cuckoo*, the blue clean fowl, and some other eccentricities claiming a Game pedigree, the mere mention of them will suffice for even if their lineage be pure, they are far behind in point of feather.

On a general retrospect of the Game fowls exhibited in 1853, terms of high commendation must certainly be employed, and a manifest advance on the pens of the previous year will readily, we believe, be conceded. But still, here, as elsewhere, there are numerous instances where poultry associations should direct improvement to obvious faults in birds shown in these classes. More especially, indeed, should attention be drawn to the obvious infusion of Malay blood that has so often disfigured pens purporting to contain Game fowls. On more than one occasion, indeed, full half the pens were summarily, but most justly, disqualified on this account; for a single glance is sufficient for passing sentence on the coarse-headed, awkwardly-formed fowls whose parentage is attributable to such a cross. The evils of mongrelism are seldom more conspicuous than in birds thus descended; and there is such an entire absence of any single property, or characteristic (unless mere weight be so considered) benefited by the misalliance, that we are utterly at a loss to imagine the notions that have induced so many breeders to bestow their care on them.

Pedigree has most properly been stated as an essential point in the selection of the breeding-stock of our fowls generally; but nowhere should we be more cautious against any omission of this security for the excellence of the progeny than where Game fowls are concerned. The results, indeed, of crosses with other strains of the same general family, but varying in point of colour, seem very uncertain, both as regards the duration of their effect, and their actual extent and application to the progeny. To illustrate the first case: pile chickens are asserted to have been thrown from black-breasted red birds, carefully watched and guarded against any stain for upwards of ten years; while in some experiments of our own during the last year, Duckwings, perfect to a feather, were bred from a cinnamon hen-tailed cock and a Duckwing hen; and a friend's Duckwing cock, again, with a black-breasted red hen, gave as good a black-breasted red pullet as could have been desired. But, alas! for the unfortunate breeder, who, ignorant of their origin and pedigree, had taken either of their productions for stock, perfect as they appeared to the most critical eye. Hence, however, the manifest explanation of the pile chickens thrown after the lapse of so many years from a black-breasted strain which could have had no intermixture in the interval; although, in ninety-nine cases out of a hundred the disastrous consequences would have been far more quickly brought to light.

Let pedigree, therefore, be enquired into with the utmost diligence where Game fowls of pure race are looked forward to as the tenants of our yard; and this rule may, also, profitably be extended to every other variety of our domestic poultry, though recorded instances may seem to require it more especially in the birds that have been the subjects of this present paper.

THE TANK SYSTEM OF HEATING.

I HAVE just seen your impression of the 10th inst., and find that one of your correspondents wishes to know the best material for preventing the leak in wooden tanks. Now, as I was the first to recommend the tank system,—and my first experiment was with a wooden one,—I think that I may claim to know the best modes, having had a great deal of experience. I should, therefore, recommend your correspondent (*J. M.*) to have the joints ploughed and tongued, with slips running through the plough, imbedded in *white lead*. No water will then run through the white lead, and then four good coats of paint over the entire surface will preserve the wood for many years. I see that you recommend Roman cement, but that will not answer at all, as it will not adhere to the wood. White lead is the only material that will do; and, with proper attention, a wooden tank, well made with good seasoned material, the joints well put together with white lead, and well painted every three years, will last for a very long period, and is by far the cheapest of all tanks. I write this from experience; and if your correspondent requires any further information, I shall be glad to afford it.—WILLIAM E. RENDLE, *Royal Nurseries, Plymouth.*

PULMONARY DISEASE IN POULTRY.

IN February, 1853, I purchased a well-bred Shanghae pullet of Mr. Sturgeon's breed. She did not appear then of strong constitution; and in April last, in consequence of roosting in a cold house, she showed symptoms of disease, exhibited in shortness of breathing and wasting of flesh. She has throughout laid well, and had a brood of chickens about five weeks ago, but has never since April been able to eat dry food without a cough. On Wednesday last, the 21st, she appeared to labour for breath exceedingly; I gave two teaspoonfuls of castor oil, and the next day she was much easier. The following day she again grew worse, could not eat at all except the food was placed in her mouth, when she swallowed freely; the fourth day she died suddenly. On the 26th of September I had her opened; the "post mortem" exhibited sound liver and all other parts, except the lungs, which were *totally decayed*, indeed, I may say, in almost a *fluid state*, and on the left side of the lungs there was a bag of solid hard pus as large as the egg of a bantam. I could not have supposed that within four days of death any creature could have walked about and eaten well, as she did (moist food), with such a disease existing in the lungs. It is well to observe that her produce has been fine, but all of them exhibit a delicacy of constitution, and several a tendency to the same disease.—A WILTSHIRE INCUMBENT.

SUGGESTIONS FROM THE GARDEN AND THE FIELD.

By Cuthbert W. Johnson, Esq., F.R.S.

(Continued from page 488.)

EARTH AND WATER.

SOME of the uses of the metals and earths of which the solid portion of the globe is composed are evident to every one. They are necessary as a resting place—a habitation for our very existence. The same remark applies to vegetables. The Greek philosopher, in fact, considered that in these consisted all the uses of the earth to organised beings. Chemistry, however, has enabled us to find out that the use of the earths of which the globe is chiefly formed is not confined to their mechanical properties, but that they enter into the composition of both animals and vegetables, as essential portions of their composition. There are only about three earths which chiefly constitute all cultivated soils, all of which are found in vegetable substances. Lime, united with either the phosphoric acid or the carbonic acid, is found in almost all vegetables, and these substances, when consumed by animals, furnish the very materials of which bones are composed.

Equally common in vegetables is the presence of the

earth silica (flint). It abounds, for instance, in the Grasses, in the straw of Wheat; it exhibits itself in such large proportions in the Dutch Rush that the turners use it to polish the hard woods, ivory, and even brass.

The earth's alumina and magnesia (or clay) are also found in plants, but in less proportions than either lime or silica.

One great use of these earths in the composition of vegetable substances appears to be to impart the necessary degree of hardness and strength to enable them to support themselves.

The chemical examination of the earth, is, indeed, full of wonders. The mixture of different soils, for instance, so essential to the production of vegetation, and so universal on the surface of the earth, betrays the wisdom of the Creator. Three earths—lime, alumina (clay), silica (flint), constitute, we have already seen, the great mass of the earth we inhabit, are present in all soils; two of them exist as necessary ingredients in all vegetables. These earths, had chance formed them, or accident thrown them together, would have been found on the earth's surface in great and distinct masses. Mountains of pure alumina would, at least, occasionally have been found by the side of or piled upon masses of pure silex. Strata of pure earths would have been occasionally distinct; the divisions separate and defined; but this is never the case on our globe. The earths are invariably found mixed together, or if a specimen of a pure earth is discovered, its rarity speedily entitles it to a place in the museum of the mineralogist.

Yet, amid all these endless mechanical mixtures of the earths in all soils, the chemist's investigations clearly inform us, that without this mixture no plants could have existed. No vegetable, for instance, will grow in either pure lime, pure alumina, or pure flint; nay, if either earth constitute only nineteen parts out of twenty of any soil, such land is worthless for all the purposes of cultivation. The mixture, therefore, must have been made from the creation, otherwise no vegetable substance could have flourished; no plant would have ripened its seeds.

The advantages of water to all animals and vegetables no one will doubt; the use is universal; the advantages undisputed. It being, then, acknowledged that the presence of a fluid is necessary for our health, and for our very existence, the value of that abounding fluid next engages our attention. The insipidity of water, its utter tastelessness, has often been remarked upon; had it been formed bitter, or sweet, or acid, how nauseating by its incessant recurrence would it have become.

It differs, too, from all other fluids, in being operated upon by the withdrawal of its heat in a manner totally different from all other fluids; other liquids, other solids, are contracted by the withdrawal of their heat; they become solid, they still contract, if their heat is still further withdrawn, but this is not so with water. This all-pervading fluid contracts by the loss of its heat only to a certain point, till it becomes of a temperature equal to about 40° Fahrenheit; it then ceases to contract, and as its temperature is still farther lowered, it begins gradually to expand. Ice is of much less specific gravity than the water of which it is composed. Ice, therefore, which is always of the temperature at or below 32° of Fahrenheit, is hence made to float on the surface of the water, instead of sinking and remaining undissolved at the bottom of the water, which it would have certainly done, had not the Creator, in this case, as in many others, made provision for the foreseen contingency, by making a deviation from the laws by which all other fluids are governed.

(To be continued.)

CHEAP GAITIES FOR A GREENHOUSE.

BEING forced to be economical in my gardening pursuits, I have been trying to keep a cool greenhouse gay with common plants, by making them flower at unusual seasons, and as many of your readers may be in the same position, I may give them the result of two experiments I made last year.

I took a *Lobelia erinus* just about to bloom, in July last,

and cut it over to within an inch of the soil. It started freely, and in November was a mass of blue, in which it remained till the middle of February,—a most valuable acquisition in these dull months.

I had a small plant (a spring cutting) of *Salvia fulgens*, which I kept back with the hope of making it bloom in winter, but, owing to the want of sun, probably, the flowers were abortive, so I gave it little water just to keep it stationary till the end of January, when I gave a shift into a 12-inch pot, and now it is two-and-a-half feet high, and covered with buds, a few of which are in bloom to-day. It will be gorgeous before this is in type.

I do not think the *Salvia splendens* is cultivated as it should be. It is very valuable, blooming, as it does, in winter. Perhaps you or others might recommend other plants suitable for similar treatment. My greenhouse is a "lean-to;" the thermometer during winter 35° to 40° in frost.—G.

[We shall be glad of such suggestions from any of our readers.—Ed. C. G.]

WASPS' NESTS.

QUEEN Wasps are about appearing, and then will be found the nests they establish; and I think it will be of service to inform the readers of THE COTTAGE GARDENER how they may take them (no matter how strong in number, or big in size they may be) without ever being severely stung.

The hot-water system is by no means a safe one; and far less a sure one. It may do occasionally, where a nest is so situated that an abundant supply of boiling water is at hand; but let several nests be situated half a mile off, then it becomes a little more than a joke to get boiling water that distance, and often when applied it harmlessly runs down large cracks in the ground as fast as it can be poured in. Another plan, equally objectionable, is to take a bundle of straw, a pitch-fork, a mattock, candle and lantern, with six or eight in party, and so proceed to the place of conflict, when a portion of straw is lighted and placed over the nest, and more is continually added to keep up the flame; others are labouring at the same time, endeavouring to exhume the nest, which they succeed in doing sometimes, and sometimes not, but it generally terminates with a severe stinging, of which, in bygone years, I have had an ample share; but this mode of proceeding is not at all applicable where nests are situated near a wooden or a thatched building; but many a wounded hedge-row, for years after, could tell the stroller, as he passes, that here the law of warfare had been carried into effect—that is, to kill, burn, and destroy.

The plan I have to propose is simply this: melt any quantity of brimstone in a flower-saucer; have any kind of rags, such as bits of worsted stocking, flannel, or carpet, four or five inches in length, and two inches wide, and dip them well in the melted brimstone. Make enough of these matches, for they will keep any length of time.

The next thing is to find the nest, or nests, which may be unfailingly done as follows: Suppose the fruit they are attacking should be situated in a confined place between buildings, then take a portion of the fruit and place it in a convenient open space where you can command a clear view; they will soon find it out; take your stand close by, and wait till several cargoes have been taken, carefully marking their line of flight, and if they do not all go in one direction, know for certainty there is more than one nest; then, to find them, go in a straight line according to their line of flight, and, so far as my experience goes, I believe it is an unerring rule to find them. I can now, on some occasions, pretty well determine the distance of a nest in this way: first, suppose the ground inclines downward in their line of flight, and from their starting point they partake of this inclination, you may conclude the nest is between you and the next rising ground. Secondly; if their inclination is the reverse of this, rest assured the nest is beyond the valley lying between you and the rising ground beyond. Having found the nest, take one of the prepared brimstone matches, a lighted lucifer, and spade, and, above all, the house bellows. Then, within a short distance of the nest, light the match at one end, wait a little till it is well lighted, then place the lighted end at the hole, and directly apply

the bellows, blowing the burning brimstone steadily into the nest, pushing the match forward towards the hole as fast as it is being consumed, till the whole is blown into the nest.

At the commencement of this operation a dismal humming noise is heard, but only for a few seconds, when all is hushed in death. No matter how strong the nests are, so much may all be accomplished in two minutes. This being done, dig out the nest, and, if not wanted for any purpose, smash it with the back of the spade, and the work is complete without a sting; for not one will escape to tell the tale.

I hardly need say, this business had better be attended to after dark. If the nests are not dug out the embryo young are not destroyed by the brimstone fumes, and in a few days they become numerous enough to attend to the wants of the colony. I have sometimes taken a nest home, and kept it to watch the young come out of their cells. When the nest is large a very considerable number hatch daily. For many years past, people finding a wasp's nest tell me, as a matter of course; and I, as a matter of course, go and take them. We have had scarcely any here (Hendon) for these two years. Some years they are very numerous. The most in number I ever took in one evening were eight nests. The above method does equally well for hornets.—W. BURGESS, *Hendon, Middlesex.*

BEE KEEPING FOR COTTAGERS.

(Continued from page 491.)

JULY.—Not much can be done this month except keeping the hives shaded and ventilated, removing supers as they fill, and watching for and destroying vermin. Fresh supers should not be given after the second week in this month, or the hives will want a great deal of feeding in October: this chiefly applies to garden counties; in heather counties the season (as already observed) both begins and ends much later.

As supers are removed, the piece of wood, or straw, or, if the weather be hot, the piece of perforated zinc, should be replaced over the centre hole in the stock: in a good season, between twenty and thirty pounds of pure honey may be taken by means of supers: this honey is much better than that from the stocks, both in quantity and colour, and fetches a better price in the market. Early swarms sometimes themselves throw off swarms; these are called virgin swarms, and the honey from them virgin honey: they should always be returned to the parent hive, or joined to a weak stock.

AUGUST.—The directions for last month must be attended to.

m. As the services of the drones are now no longer required, and as their consumption of food is considerable, the bees proceed to eject them from the hives; once out, they soon perish: the numbers lying about frequently alarm the inexperienced bee-keeper, who fancies that a sudden destruction has come upon his hives.

e. Begin to prepare for taking up extra hives: ascertain which of the hives are strongest and healthiest, for these only should be kept. Activity in carrying in pollen, vigorous blowing at the entrance, irritability on tapping at the hive, a sweet and luscious odour issuing from the entrance, resentment of the attacks of strange insects, are all signs of health and strength. Where such signs do not exist, most likely the stock is weak, or the queen has died without leaving a successor; such hives should not be kept, but joined to better hives.

SEPTEMBER, b.—Except in heather counties the honey season will now be over, and the bees will scarcely get enough to keep themselves: all the hives in the Apiary should be weighed, the light ones should be joined on the heavy ones next to them, and those taken up should be safely stowed away or the bees would scent them out and deprive them of their contents.

The position of the pedestals has already been spoken of. Where they are placed in two's, and the space for the third has been filled up, and you have a stock, first swarm, and second swarm together, the two swarms may be joined to the stock, unless the stock be four years old, when it

ought to be taken up: in this case, the stock and second swarm should be joined to the first swarm: but as to this, see Section 5.

If the depriving system has been properly managed, very little will have to be done in joining, except with the stocks which have been allowed to swarm prior to being taken up themselves.

The honey from these old stocks, though dark, and sometimes very much mixed up with brood-bread, is excellent in flavour: the best way of dealing with an old hive will be detailed in Section 6.

m. and e. As the bees become less active, the entrances should be gradually contracted.

(To be continued.)

TO CORRESPONDENTS.

* * We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

SPEKELIA FORMOSISSIMA (C. W.).—This correspondent potted a dozen of the old Jacobaea Lily, and set them in the warmest end of a greenhouse at the beginning of last November, and is surprised that they have not grown, and asks why this happens? It was ordained at the beginning that this bulb should rest all the winter, and that Tulips and Hyacinths should rest all the summer; and none of us can show that either section has ever been forced to violate the original fiat. They are now beginning to move, and will grow on till stopped by the frost.

ORNAMENTAL GRASSES (R. M.).—All Grasses are highly ornamental, according to some; grasses are among the most useful of the vegetable kingdom, cry others; and, grasses are the most troublesome of weeds, according to a third creed. In short, grasses are anything one likes or dislikes—a vexed question, which Mr. Wheeler, of Gloucester, or Mr. Sutton, of Reading, and the rest of the Grass dealers, are the proper parties to decide. Except *Briza major* and *minor*, we have no grass in the flower-borders, except here and there a patch of *Pampas grass*, and, in old gardens, the Ribbon grass (*Arundo versicolor*).

BERBERIS ASIATICUS (Ibid.).—We do not know where plants of it are on sale. Some one should advertise them, or for them. The seeds ripen in abundance every year.

FLOWER-GARDEN PLAN (Moira).—The plan and the planting are both good, and will look much better on the ground than on paper. We have made several such alterations on the original, which looked well, but are not so sure of the effect of a duplicate with a leading walk between, but it will be very gay. The original was at Dropmore, and was published in 1827. The two centre figures for Hydrangeas and white Fuchsias are not at all improvements on the original, and the plants for them are not in keeping with that style—they are too high.

HYDRANGEAS (Ibid.).—They will grow in any good garden soil, if it is not chalky, or in peat, or in a mixture of both, and they like very rotten dung. *Deutzia gracilis* is, and *Veronica Lindleyana* is not, hardy. *American Groundsel* will flower the first year from seeds; but a bushel of this seed is not worth three farthings, and it is disgraceful to the trade to offer such seeds at all, as not one seed out of five thousand will produce a double flower worth looking at.—D. B.

STOPPING THE LEADER OF FIRS OF SPRUCE (Ibid.).—Stopping the leaders at any height will never cause one of them to get bushy where they are now bare; but it is a good plan to keep them down, and to make them spread on all sides.

CUTTINGS (Carig Cathol).—Two unsuccessful applications were made on your behalf.

BEES (A Surrey Farmer).—The plan you propose of having your first swarms in "Improved Cottage Hives," and to work these with supers and glasses on the depriving system, is very good, only that your hives, 13½ in. by 11 in., are a very bad, and to the bees an inconvenient size. *Payne's Hives*, which are 14 in. wide, and 7½ in. deep, in usual measure, are far better, and are, indeed, the best-shaped straw hive of the present time.

BEES—UNITING SWARMS (W. G. H.).—It is quite unnecessary to destroy either of the queens when you unite two stocks, or two swarms, or a stock and a swarm. The bees themselves will decide which of the two had better die for the public good.

STEPHANOTIS FLORIBUNDA SEED (Campbell).—The seed-pod is of no use, and it may be a deadly poison. It is not very useful for seeds to ripen here, and some botanist might wish a ripe pod for examination. We are not sure of the time required to ripen it.

GARDEN PLAN (John o' Groat).—We do not recollect the plan alluded to. Your *Strawberries* were not nearly ripe at the end of the autumn. "The worst ones seem to do best," is an index to your complaint; the riper ones are not so green and flourishing as the unripe, and they do better.

LANTANA SELLOWII (A. B.).—If any seedman sent us seeds in the pod, or berry, we would return it instantly, and at his expense. Of course you must rub the clusters of berry-like pods before you sow. The seeds are small, but the chances are that you have no seeds at all, only the seed-pods.

VERBENA-BED AGAINST A WALL (H. G.).—Plant *Robinson's Defiance* at the back for training against the wall, and let the rest of the bed be mixed. But why refer to anybody in a matter of pure and simple fancy?

BEDDING-OUT GERANIUMS IN POTS (C. K.).—There is no rule for the size of pots so used. Small plants in small pots, say No. 48; good-sized plants in No. 32 pots; and larger plants in pots proportionally large. Pots which would do for the plants in the greenhouse will do for them in the beds.

PLANTING TWO BEDS WHERE BULBS ARE (Solon).—Yes; *Mimulus* and *Heautseuse* may be planted between the Tulips and Narcissus. It is no bad idea. To the second query: No. How could you be so cruel as to kill such beautiful Hepaticas by cutting-off their leaves to make room for seeds. Touch not a leaf of them. We never saw a really blue Polyanthus; a grey violet colour is not uncommon among them, but we never heard of a true blue. Such a self is worth something.

WHITE FEATHERS IN BUFF SHANGHAES AND BLACK POLANDS (Amicus Galli).—A small portion of the primary wing-feathers of the buff and cinnamon Shanghaes is occasionally marked with white; but from the position in which the wing is carried, such markings rarely meet the eye, unless the bird is handled for the examination. As a general rule, any white feathers visible on a buff, cinnamon, or partridge-coloured Shanghae are highly objectionable. The white-crested Black Poland should not have a single white feather, the top-knot alone excepted. In giving this opinion, however, we are fully aware that the presence of white on the tail has not always been held to disqualify, but there appears no reason why the presence of other colours should be any more tolerable in this instance than in Spanish, Black Shanghaes, or Black Bantams. As to the top-knot itself, we have never yet seen an "untrimmed" bird without black feathers at the base above the nostrils.

MARCH AS A HATCHING-TIME (Ibid).—March is a good month for hatching any variety of fowls, though, wherever exhibition at the summer shows is contemplated, an earlier period is chosen. An April-hatched bird, however, will probably, by November, be fully equal, in all points, to those that have preceded it in the same year.

MOTHER FOR SILVER-SPANGLED HAMBURGS (Ibid).—A large Shanghae hen would be too heavy a mother for Silver-spangled Hamburg chickens, and the latter, being less sturdy and independent in their chickenhood than the former race, would require longer maternal superintendence than the Shanghae dame would probably deign to afford them.—W.

WRITING ON ZINC LABELS (—).—Scrub them bright with coarse sand-paper, and write on them immediately, by the aid of a quill pen, with the following ink:—1 drachm of powdered verdigris (acetate of copper); 1 drachm of powdered sal ammoniac (muriate of ammonia); $\frac{1}{2}$ drachm of lamp black; 10 drachms of water. Mix them together in a two-ounce phial, and shake it every time before using. It is ready for use as soon as the verdigris and sal ammoniac are dissolved.

WEBS ON ROSE-SHOOTS (H. Helyar).—These webs, which draw together the leaves and buds of Roses, are formed by the caterpillar of a very small moth, called *Tortrix Bergmanniana* and *Argyrotoza Bergmanniana* by different entomologists. No mode of destroying the caterpillars has been found out, except the tedious one of hand-picking. Try what dipping and stirring the shoots in white Hellebore powder will do. We know of no precautions for preventing the eggs being laid upon the bushes by the moths.

FEATHERS FALLING OFF (J. Brothers).—The feathers falling off as described, we think is only the usual spring moult. Keep the fowls liberally and give them also plenty of green food, and the feathers will return, in all probability, with the warm weather. We do not understand from your note that there are any wounds or ulcers about your fowls.

SILVER HAMBURG FOWLS (Cold Brafield).—The Spangled are larger and rather harder than the Pencilled. In other respects, we consider them of equal merit. You will see their eggs advertized in our columns.

FOOD FOR YOUNG CHICKENS (B. P. T.).—We have recently given directions for this at p. 431.

BROODY HEN (J. G. B. L.).—It is cruel and ineffectual dipping a hen into cold water to cure her of wishing to sit. She requires a cessation from egg-producing, and ought to have it. If we do not wish such a hen to have chickens, we let her remain on her nest for ten days, and then shuter her up for about the same time in an outhouse, without straw. This generally is sufficient for her.

GLASS FOR GREENHOUSE (W. O. D.).—We should use the ribbed glass. *The Cottage Gardener's Dictionary* will give you the guidance you require.

SEA WEEDS (Bessie).—Dr. Harvey's work is an admirable one; the price about seven guineas. The figures are all coloured. Dr. Landsborough's "Popular History of British Sea Weeds" might suit you. Its price is half a guinea. *The Cottage Gardener's Dictionary* is one of the most useful books we know. Its price, 8s. 6d.

FERNS (A. C. Close).—"Can you oblige many of your subscribers by inviting cultivators of Ferns to advertise lists of such plants in your columns. One knows not where to apply." This is from a clerical correspondent, and we know that to advertise Ferns and their prices is very desirable for all parties. There is a growing taste for them.

BLACK MALAYS.—W. Lort, Esq., Great Heath, near Tenbury, would be glad to hear from M. F. G. relative to those birds. Other queries next week.

HARDY BORDER PLANTS (W. Robertson).—Your clever countryman will continue his essays on Evergreens and other hardy border plants.

EGGS JOINED TOGETHER (A. Watts).—Whenever a hen's egg system becomes diseased the phenomena are very various. We never heard before of two soft eggs united together being laid, but we have seen one egg pinched into lengths like links of sausages. Give her a pill of one grain calomel and one-twelfth grain tartar emetic every second day for a week; and give her nothing but soft food, and plenty of green meat. Keep her in a cool dry place.

NAME OF PLANT (Rev. R. M. E.).—The Holly-leaved Berberry, *Berberis aquifolia*, the *Mahonia aquifolia*, as it was called at one time.

LAMENESS IN SHANGHAES (G. S. B.).—It is probable that the lameness in this case arises from an abscess under the dense fibrous structures of the toe. In this case, a free longitudinal incision would afford great and immediate relief, and would readily heal in the course of a few days. It is important that the incision should not be made across the toe, as the tendons might, in that case, be cut across.—W. B. T.

CALENDAR FOR APRIL.

ORCHARD AND FRUIT GARDEN.

APPLES, cleanse from blight; protect blossoms. **APRICOTS**, protect with care. **CHERRIES**, finish training. **CURRENTS**, finish dressing. **DAMSONS** may yet be planted; thin out the crowded spray in the interior. **FIGS**, remove all covering; prune at the end. **GRAFTING**, see that the clay is safe, and rub off wild spray betimes. **GOOSEBERRIES**, beware of the Caterpillar. **INSECTS**, check vigorously early. **MULBERRIES** may be planted. **NECTARINES**, see *Peaches*. **PLUMS**, finish pruning those which blossom on the young wood. **PEARS**, as *Plums*; protect blossoms. **PEACHES**, use the cleansing mixture named in former calendars; still protect, and disbud at the end. **PRUNING** of all fruit-trees may still be done, if neglected at proper time. **RASPBERRIES**, get tied if not done; top-dress. **STRAWBERRIES**, spring-dress if delayed. **STAKING**, attend to. **TRAINING**, complete in all fruits. **WALNUTS** may yet be planted. **VINES**, train and plant. **Planting** of all kinds may yet be done, implying, of course, neglect or omission at the best period. But every winter arrear must be brought to a close forthwith. R. ERRINGTON.

FRUIT-FORCING.

AIR-GIVING, attend regularly to, avoiding cold draughts. **BOTTOM-WARMTHS** renew; 75° to 80° are safe points. **CUCUMBERS**, attend closely; stop often; use liquid-manure, and sustain a warm and moist air—70° to 85°. **CHILIES** and the **CAPSCICUMS**, pot off and hasten. **CHERRIES**, avoid strong heat; keep a moist air. **FIREES**, moderate, according to season; let solar heat do its work. **FIGS**, such as *Peaches*, as to temperature; water frequently, and pinch young wood. **FLOORS**, wash down frequently. **GRAPES**, ventilate freely where ripening; remove crowded laterals; succession crops, follow up the usual routine of disbudding, stopping, training, and thinning. **INSECTS**, exterminate—Aphides by tobacco, Red Spider by sulphur. **KIDNEY BEANS**, apply liquid-manure, and get in successions. **MELONS**, keep thin in bine early, set blossoms, and stop and train weekly; provide successions. **NECTARINES**, as *Peaches*; pinching-off waste or watery shoots, remember. **PEACHES**, train, and top thin fruit. Use the syringe freely, and a free ventilation. Shading use occasionally in case of need. **STINGING**, do not lay it by; use it frequently; it is a capital cleanser, and an enemy to insects. **STRAWBERRIES**, attend to daily, water liberally, and give abundance of air, keeping down runners. **TOMATOES**, cool down ready for planting-out in the second week of May. **VINES**, attend well to in the ordinary routine of stopping, training, and berry-thinning; pray do not leave extra berries for a rubbishy tart or two. **WATERING** must be a daily affair now; every thing examined. R. ERRINGTON.

ORCHID HOUSE.

AIR.—The days are now considerably longer, and the sun has more power, consequently more air will be required to keep the heat moderate. **BASKETS**, continue to renew, if not finished last month; dip them in tepid water once a week; put in baskets plants to ornament the house, such as *Eschynanthus*, *Achimenes*, *Hoya bella*, *Aganympha staminea*, and any other drooping freely-flowering plants. **BLOCKS**, syringe daily. **DENDROBIUMS**, and other plants in flower, remove into a cooler house; they will then last much longer in flower, but as soon as the bloom is over, return them into the warm house to finish their annual growth. **HEAT.**—As the plants will now be growing freely, they require the maximum of heat; in the Indian house, 75° to 90° by day, 65° to 70° by night; the Mexican house should be 10° lower. **INSECTS** will now multiply rapidly; use every means to extirpate them, and prevent their increase. **POTTING**, continue to all such as require it: the grand rule is to pot orchids as soon as new growths are apparent. **SYRINGE** freely in dull weather in the mornings only, but during sunny weather, syringe in the evenings also, shutting up the houses close previously to syringing; a moist growing atmosphere will be the consequence. **WATER.**—As the growths advance, increase the quantity of water at the root; dash it freely upon the platforms, walks, and walls daily, to keep up a large amount of atmospheric moisture. T. APPELBY.

PLANT STOVE.

ACHIMENES, re-pot and divide, if required, the first potted batch; specimens may now be made, by placing several plants in a large shallow pot in leaf mould, chopped sphagnum, and turfy loam. **ÆSCHYNANTHUS**, pot and train to a globular trellis; these make fine showy plants. **AIR**, give freely on all favourable occasions. **AMARYLLISES**, pot and plunge in a bark-bed in a pit, to start them into flower and growth. **BARK**, renew, by sifting the old bark, removing the fine particles that pass through the sieve, keeping the rough in the pit, and adding sufficient fresh bark to raise it a little higher than the level; do not plunge the plants till the heat is moderated. **CLIMBERS**, dress, tie, and train neatly. **HEAT.**—Keep up a brisk heat by day, but more moderate during the night. **IXORAS**, attend to specimens of, and tie them out so as to form dense handsome bushes. **MOISTURE**, give to the air of the house by dashing water about upon the floors, walls, and hot-water pipes. **POTTING**, general; finish the first early in the month. **RED SPIDER**, and all other insects, diligently destroy; wash the flues or pipes with water and sulphur mixed together; lay it on with a whitewash brush. **WATER**,

give abundance of to growing plants; keep every part clean and sweet, all decaying leaves remove, and syringe the leaves of the plants daily, especially as a day's bright sunshine. T. APPLEBY.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES will now be advancing fast into bloom; shade from bright sun, and shelter from heavy rains. CARNATIONS and PICOTEES finish potting; shelter from severe weather. CHRYSANTHEMUMS, pot off cuttings put in last month; put in more cuttings, b., keep them in close frames till fresh rooted. CINERARIAS coming into flower remove into the greenhouse; young plants re-pot; smoke frequently to destroy green-fly. CALCEOLARIAS advance a stage by re-potting; smoke these also; frequently the green-fly is their grand enemy. DAHLIAS, pot off cuttings; some that are scarce may yet have cuttings put in; give plenty of air to growing plants; old roots plant in borders towards the end of the month. FUSCHIAS, continue to increase by cuttings, if required; specimens of forms by repotting twice during the month; re-pot old plants; shake off a large portion of the old soil, and pot them in the same sized pots. HOLLYHOCKS, finish planting, b.; mulch with short litter; sow seed in shallow pans in a gentle heat, or sow in open borders, or nursery beds. MIMULUSES, divide, and re-pot in light rich compost. PANSIES may yet be planted in beds; stir the surface of the soil of the beds planted last month. PINKS, cover bed with a thin mulching of very rotten dung, stirring the soil previously; sow seed of either in the open border, or in shallow pans. RANUNCULUSES, if the soil on the surface has become hard, stir it gently, breaking the clods with the fingers; keep a good look out for slugs, if they abound give a good watering with lime water. TULIPS, be very particular, and keep them well sheltered from late spring frosts, but expose them to all the favourable influences of mild rain, and the warm beams of the spring sun. WEEDS, never allow to advance beyond the seed-leaf. T. APPLEBY.

FLOWER-GARDEN.

ANNUALS (Tender), prick out those sown in February and March into a hotbed; water gently but often; sow in hotbed; (Hardy) may be sown in borders, &c., to remain; thin those advancing. AURICULAS in bloom, shelter. (See HYACINTHS.) Supply with water often; those for seed, plunge pots in a sheltered border, where they can have sun until 11 o'clock; plant offsets; propagate by slips; seedlings shade during mid-day. AURICULAS done flowering, place out-of-doors, and separate off-sets. Box edgings may be made, and old taken up, slipped, and re-planted; clip Box edgings. BIENNIALS, finish sowing, b.; plant out those sown last spring. BULBS, in water-glasses, done flowering, plant in ground after cutting down stalks, but not leaves. CARNATIONS, in pots, give liquid-manure every third time, very weak, and water often; stir the earth; sow, e.; plant into borders, b. CLIMBING plants, train and regulate. LAYER RHODODENDRONS and hardy AZALEAS, DAHLIAS, plant to remain, b.; or in pots, to forward in a frame until May. DRESS the borders, &c., indefinitely. FRAMES, raise, by supporters at the bottom, as the plants within grow tall. GRASS, mow once a week, and roll oftener; trim edges; dress with earth if poor; and sow seeds, especially white and small yellow CLOVER. GRAVEL, turn and lay afresh in dry weather; roll after rainy weather often. HOZING AND RAKING walks give up, and lay them down in concrete. HYACINTHS, shelter from sun by an awning of matting over the beds, from nine to four; give the same shelter in bad weather day and night; cut flower-stalks as they cease blooming, and take special care of leaves. INSECTS, destroy with tobacco smoke, or hellebore powder, or dusting of Scotch snuff. MIGNONETTE, sow in any warm border. MULCH, put round trees newly planted. PINKS, sow, POLYANTHUSES, sow; plant out and propagate by offsets, b.; last year's seedlings now in bloom, mark best for propagating. POTTED PLANTS, give fresh earth to, if not done last month; shift into larger; water freely. PERENNIALS, those sown last spring may still be planted, and propagated by offsets; finish sowing. STICKS are required to blooming plants. TULIPS, shelter from sun and wet; take off pods to strengthen bulbs. WATERING is now required more frequently, yet moderately; give it early in the morning. RANUNCULUSES, water freely, and press the earth very hard between the rows. ROSES, thin buds where very abundant; watch for grubs in the buds, and crush them; make cuttings of *Gloire de Rosamane* to bed next year. TOBACCO WATER, use to destroy the aphides, by dipping the shoots in it where the insects are. Prepare for a large stock of common CAPSICUMS to supersede tobacco for killing insects. Take stock of your BEDDING STUFF, b.; and bring up arsears, if any; keep all such rather dry, and inure to cold in time.

D. BEATON.

GREENHOUSE.

AIR, admit freely in mild weather; give sparingly when east winds prevail, and then merely by the top sashes, to avoid cold draughts; shut up early in the afternoon, and if sunny, sprinkle the plants from a fine syringe when it is desirable to encourage growth; plants making their growth should, therefore, if possible, be kept apart from those in bloom. AZALEAS, coming into and in flower, water freely; those to be retarded remove to a north aspect, under glass or even an opaque roof; a temporary protection by mats, canvass, or oiled cloth will answer admirably. BULBS, introduce. CAMELIAS, water freely when in flower; those done flowering keep close, to encourage growth, and shortly afterwards re-pot if necessary. CALCEOLARIAS, CINERARIAS, PRIMROSES, CYTISUS, &c., assist with manure-water, weak, but given often. CACTUS, the late kinds water at the roots, after swelling the stems by syringing. CONSERVATIVE-WALL PLANTS prune, train, and protect, more to keep off the sun at first than the cold. CUTTINGS, insert; place in hotbed or shady place according to kinds. CLIMBERS, regulate. EPACRIS and HEATHS done flowering, cut back, and also any other straggling plants, and keep them by themselves, so as to be close and warm, to encourage them to break freely; those in, and coming into flower, keep in the airiest part. For winter blooming of the reddish-tinted kinds of Epacris, none excels

the *impressa*: *hyacinthiflora* has much larger flowers, but the colour is duller; do not be afraid to cut back such plants freely; and if you can give them a closer atmosphere, and 10° higher temperature than the greenhouse, it will cause them to break better. FUSCHIAS, water the forward ones freely; fumigate with tobacco at the first appearance of fly. GERANIUMS, train the first, encourage the second, and stop, pot, and propagate for autumn supply. GESNERA, especially Zebria, and GLOXINIA, various varieties, start in a hotbed; the roots may be kept safely during winter, if dry, in a temperature of from 40° to 45°. This rule applies to the whole of the Achimenes, and most plants with scaly and bulbous tubers. Those who have pits and frames, and no greenhouse, may manage them nicely by packing them in a kitchen cupboard. Few things answer better for window plants in summer and autumn. HEATHS, in bloom and growing, keep in the coolest and airiest part of the greenhouse, and if the sun shines strong, defend the pots by shading or double pots; the *Honea* and *Chorozema* tribes will require similar care, and then, with good drainage and plenty of water, there will be no danger. Prepare for general POTTING by getting soil, pots, &c., in good order, but do not let a plant wait for a time when it wants attention. PROPAGATE by seed, roots, cuttings, inarching, and grafting; young plants thus get strong before winter. Sow SEEDS; beware of burying the smaller ones; the pots should be well watered previously, and when settled, the seeds sown, slightly sprinkled with a little sand, pressed down, and a square of glass or a piece of paper put over the pot; for these, as well as striking cuttings of tender plants, inarching, and grafting, a sweet hotbed would not be desirable. SEEDLINGS, remove as soon as possible from the seed-pans, and prick them out singly, especially if thick. Sow Balsams, Cockscorns, Thunbergias, &c. Pot the various Achimenes, and introduce tubers for a succession. Remove decayed LEAVES. Stir and loosen the surface soil. SUCCULENTS of all kinds water more freely. WATER for all plants will now be required oftener. MANURE-WATER may now be given more frequently to Pelargoniums that have set their flower-buds, to all plants where vigorous growth is required in pots, and in all cases of plants for vases, beds, &c., where it is desirable, they should be as large as possible by the middle of May. VINES on rafters, train. STRAWBERRIES, set in; even a few on a shelf is a great luxury, and where the vine is scarcely forced, where greenhouse temperature is merely maintained, with a rise from sun heat during the day, the fruit may be obtained a month earlier than in the open air; keep the plants rather dry until the flower trusses show themselves boldly, then water freely. R. FISH.

KITCHEN GARDEN.

Let the head and the hands work together; be on the alert to any sowings that ought to have been performed last month. ALEXANDERS, sow, b. ANGELICA, sow, or plant out autumn sown. ARTICHOKEs, plant and dress off. ASPARAGUS, sow or plant; dress off beds, b.; attend that in forcing, water with liquid-manure-water once a week. BALM, plant. BASIL, sow main crop on gentle hotbed. BEANS, plant in succession; attend to earth-stirring the growing crops. BEET, of either kind, sow, m. BORECOLES, sow, and leave for seed. BROCOLI, sow main crops, m.; attend to pricking-out any early sown, and save for seed. BORAGE, sow, and earth-stir autumn sown. BURNET, plant or sow. CABBAGES, sow, plant, or prick out, and earth-stir often. CAPSICUMS, sow in hotbed, or prick out three plants in each pot, while in the seed-leaf, and forward them in hotbed. CARDOONS, sow, e. CARRAWAY, sow. CARROTS, sow main crops, m.; attend to thinning early frame or other crops, also to watering in dry weather; this, and frequent earth-stirring, will forward their growth much. CAULIFLOWER, sow, prick, or plant out; attend to earthing-up the hand-glass crops, and assist them with soakings of manure-water. CELERY, sow for late crops, m.; and attend to pricking or planting-out early sown; save for seed. CHAMOMILE, plant. CHIVES, plant. CHERVIL, sow; save for seed. COLEWORTS, plant. CLARY, sow. CRESS (American), sow in succession. CUCUMBERS, sow for hand-glass and other crops; ridge out and attend to those in bearing, as to thinning-out and top-dressing, or earthing-up. DILL, sow or plant. DUNG for hotbeds, prepare. EARTH-STIRRING, particularly attend to in dry weather. FENNEL, old roots divide, and plant or sow. GARLIC, plant, if not done, b. HORSERADISH, plant without delay, HOTBEDS for all purposes, attend to. HYSOP, sow, or plant out old roots. JERUSALEM ARTICHOKEs, plant without delay. KALE (SEA), sow, or plant, b.; carefully fork over old beds. KIDNEY BEANS (DWARF), sow, b., where hand-glasses are at command; if not, sow, e.; and *Scarlet Runners*, e. LAVENDER, plant. LEEKS, sow, b. LETTUCES, sow in succession once a fortnight, and plant out; earth-stir among often. MARIGOLD, sow. MARJORAM (Sweet), sow main crop on gentle hotbed; (*Common Garden*), plant. MELONS, sow in succession; pot off; ridge out; attend to topping and thinning-out, weekly, the early crops. MUSTARD AND CRESS, sow in succession, where required. MUSHROOM-BEDS, make, and attend to. NASTURTIUMS, sow. ONIONS, sow main crop, b., if not done before. UNDERGROUND or POTATO ONION, plant without delay, also the TREE ONION. PARSLEY, sow of either kind; leave for seed. PARSNIPS, sow without delay. PEAS, sow in succession; attend to sticking, &c.; let them be well basined up before sticking on light soils to aid the watering. PRUNY ROYAL, plant in a cool situation. POTATOES in frames, attend to. RADISHES, sow in succession; attend to thinning young crops. RAPE, sow. RHUBARB, sow or plant; bring forward by inverted pots or tubs over old crowns. RUE, plant. SAVOYS, sow. SALSIFY, sow main crop, e. SCORZONERA and SKIRRETS, sow, e. SHALLOTS, finish planting, b. SORRELS, plant. SPINACH, sow once a fortnight; thin out; and leave for seed. TANSY and TARRAGON, plant. TOMATOES, sow in hotbed, and prick out in pots, and forward in hotbed. THYME, divide old roots, and plant out. TURNIPS, sow, b. and e.; leave for seed. VEGETABLE MARROW, sow in hotbed. WORMWOOD, plant.

T. WEAVER.

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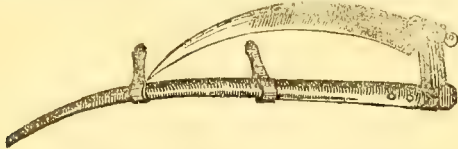
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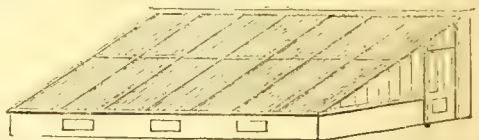
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